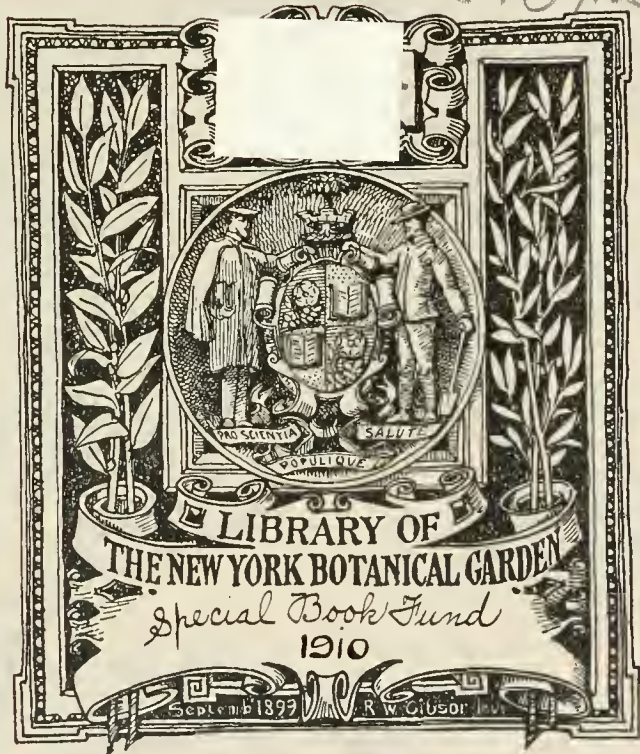




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BEE-KEEPER. AND POULTRY CHRONICLE

A JOURNAL OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY, AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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TO OUR READERS.

JUST as we wrote the above three words we received a communication from "WILTSHIRE RECTOR," on the envelope of which was written—"Nothing to say except—All's well." And what better saying could there be? Certainly none that touches more joyously the best chord of the heart.

However, a pile of letters is before us; let us see, as we hope, that they join in chorus "All's well;"—at all events that there will be no record of a severer visitation than green fly on a Rose tree, or soft eggs in a poultry-house.

First comes one from among the men of Kent, and it says:—

"I started in the profession with a few pounds I had saved as an overworked lad on the farm, and I have been compelled to educate myself as best I could. I shall not soon forget the answer I made to a jocular remark my poor father once made when he saw me sitting under a tree reading *THE COTTAGE GARDENER*, as it was then called. He said, 'You will never make a gardener, for you are not able to read me a column down that paper and explain it.' I replied, 'I should yet become a nobleman's gardener, and be able to supply an article for the *Journal* from my own pen.' Now, as I have accomplished one, I hope some day to secure the other."

That hope we know to be well founded, so *that* choruses "All's well."

Next let us quote an Oxonian letter, where it tells this tale:—

"At twelve years of age I left home with just sixpence for my private fortune, and I educated myself at odds and ends of time, and by steady perseverance and tolerable judgment in money matters, I had saved sufficient to make a good start in life, and I was thinking of getting married. The Russian war came, and the firm with which I was connected got caught, as it were, wheel within a wheel in connection with the corn trade of that country; and one morning before breakfast a letter came to say that my hard-earned fortune had taken to itself wings and flown away. I ate my breakfast, tied on my apron, and went to work again; and now I am happy to inform you that I am just independent of the world once more, and, in strictly private confidence, I once more have serious thoughts of taking to myself a wife."

No one but will mentally chorus, *That's* "All's well."

Truthfully do we add that from the same pile of letters we could not quote one that would cause a discord in the chorus, and when we turn to our lists of new and old contributors—of new and old subscribers—there is no shadow upon them; and we hope that for many years to come they and we, whether looking back upon the past, dwelling on the present, or raising our eyes towards the future, may be justified in saying—

ALL'S WELL.

INDEX.

AARDVARK SHOW 87, 86
Accrington Poultry Show, 249
Achilleas—potting, 88; culture, 416
Acute, Winter, not flowering, 88
Acorus calamus culture, 247
Advice to horticulturalists, 369
Ardisia stems, 51
Ageratum for bedding, 150
Aglaionema Mannii, 207
Agriculture and horticulture, 186
Albanian—nobilis, 127, 292; plant-
 ing out in hothouse border, 150
Allosorus crispus culture, 43
Alocasia Lowii culture, 262
Alpine Rose, 141
Alston Poultry Show, 19
Amaranth, Globe, culture, 320
Amaranthus elegantissimus culture,
 229
American blight, 151; remains, 112
Amomum sceptrum, 207
Anastasia hieroclonica culture, 13
Andalusian chickens, 865
Anemones—culture, 112; weak, 199;
 planted in February, 199; watering,
 330; Polargeniums with, 330
Angle of greenhouse roof, 81
Annals—for autumn, 88; a plea for,
 120; for slightly-shaded place, 247;
 tender, 252, 290, 320, 304, 369
Antirrhinum culture, 51
Ants—destroying, 144; banishing, 946,
 315
Aphides, destroying, 144, 149, 415
Apples—shoot swellings, 112; train-
 ing, 132; keeping, 157; exhibited by
 Mr. Rivers, 164; leaves blighted,
 431; as an orchard fruit, 287; stor-
 ing, 229; trees unfruitful, 281; Bess
 Pool, 26; Gooseberry, 67; Lord
 Burghley, 126; Ords, 128
Apricots—Australian, 176; blossoms
 not setting, 281; cutting back, 306
April, plants flowering in, 307
Arabis, dividing, 83
Arancaris, transplanting, 215
Arches, climbing for, 331
Ardisia culture, 70, 346
Artichokes, culture of Globe, 260
Artillery plant, 263
Arundo conspicua, 221
Ash trees, plants under, 229
Asparagus, 229; culture, 181, 246, 347;
 cutting, 362, 405; planting for forc-
 ing, 215; removing in summer, 298;
 shoots perforated, 363; insects on,
 381, 416; newly planted, 416
Asplenium septentrionale and alter-
 nifolium culture, 43
Asters—for exhibition, 51; sowing,
 199; aphid on, 380
Aubrietia, dividing, 83
Aucubas—berry gathering, 291; fer-
 tilizing a live, 40; variegates of queens,
 418; *Sticks*—strengthening of, 318,
 364; supering, 186, 218, 436; super-
 ing, 400; bees not entering, 412; man-
 agement of, 82, 138, *Syringas*—set-
 ting on the ground, 566; strayed,
 414; strengthening second, 411
Swarming—artificial, 46, 304; early,
 334; early at Water-Chester, 364; nat-
 ural 40
Beet—as a bedder, 324; not growing,
 416; insect on, 431; ornamental, 182;
 Sea-kale, 88; sowing for decoration,
 299; sowing for edgings, 150
Begonias—leaves dying, 182; shading,
 416
Belgian, 268
Beverly Poultry Show, 362
Bition, gardener at, 428
Pigonia radicans flowering, 331

Birds—culture, 70, 252; seed, sow-
 ing, 199; damping-off, 263
Birds—Cochin-China, 263; Duck-
 wing, same, 40, 436; Game, breed-
 ing, 138; Japanese, 91; cock dying,
 400; cockerel, 218; dubbing, number
 of hens, 318
Bark running, 262
Barnes, Mr., leaving Bition, 376
Barometer, 149
Barrow Poultry Show, 168
Bath and West of England Poultry
Show, 381
Beans—dwarf, 18; for a working-man's
 garden, 151
Bedding plants—heights, 396; man-
 agement, 181; moving, 297; pins
 for, 149; supporting, 378, 395; win-
 tering, 12, 149
Bedlington Poultry Show, 349, 363
Beech for a hedge, 231
Bees—apianian notes, 40; Baroness
 von Berlepsch, 233; in Borneo and
 Timor, 300, 333; delay in breeding,
 353; centrifugal honey extractor,
 259, 365; on old Christmas eve, 40;
 civil war in a hive, 153; combs dis-
 placed, 234, mites in, 170; in con-
 servatory, 218; cross-breeding, 58;
 dead, 418; deserting hive, 436; driv-
 ing failures, 399; dropsy, 418; dying,
 94; feeding, 22, 418; German Bee-
 Masters' Meeting, 137; commencing
 keeping, 284; Ketchik's process, 40,
 improvement of, 819; Mitchell's
 glass, 436; moving, 118; partheno-
 genesis, 169; pasturage limit, 21;
 pollen gathering, 118, early, 154;
 queens' signs of fertilisation, 334,
 introducing, 353; sagacity, 131;
 "Seventy Rounds a Year," 318; spi-
 cimens of species, 208; superposing,
 94, 137; temperature of hive, 334;
 transferring, 118, 128; case for trans-
 porting, 135; waxen sheets, 22, 154;
 wax moth, 366; weight of bees, &c.,
 75. *Foul-brood*—71, 92, 117, 169, 400,
 417, 436; new theory and treatment
 of, 185. *Hives*—118; securing bars
 of, 417; cheap and good, 208; and
 houses, 334; protecting, 22; Stew-
 arton, 76; Woodbury, 40. *Honey*—
 extracting machine, 250; in Essex,
 118; heather harvest, 250; in Ger-
 many in 1863, 202; in Lancashire,
 269; in Liverpoolshire, 218; near Mon-
 chester, 333; in Northumberland,
 205; opening season, 701; season of
 1868, 40; in South Cheshire, 134; in
 South Lancashire, 38; Suffolk honey
 harvest, 317; capture of in Timor,
 333. *Ligustrum*—250, 384; rapid in-
 crease of, 400; queens, 154; *Rubus*—
 giving a live, 40; variegates of queens,
 418; *Sticks*—strengthening of, 318,
 364; supering, 186, 218, 436; super-
 ing, 400; bees not entering, 412; man-
 agement of, 82, 138, *Syringas*—set-
 ting on the ground, 566; strayed,
 414; strengthening second, 411
Swarming—artificial, 46, 304; early,
 334; early at Water-Chester, 364; nat-
 ural 40
Beet—as a bedder, 324; not growing,
 416; insect on, 431; ornamental, 182;
 Sea-kale, 88; sowing for decoration,
 299; sowing for edgings, 150
Begonias—leaves dying, 182; shading,
 416
Belgian, 268
Beverly Poultry Show, 362
Bition, gardener at, 428
Pigonia radicans flowering, 331

Bird organ, 364
Birds, bud-destroying, 179
Birmingham Columbarian Society's
Show, 21
Birmingham Poultry Show, 72; prizes,
 399
Birmingham Philopeteron Society,
 201
Birmingham Rose Show, 336
Boggy ground, plants for, 247
Boilers—cast iron, 14; hothouse, 205;
 215; new, 391; new hothouse, 422;
 tubular, 237
Bones for manure, 33, 262
Botanic (Royal) Society's Exhibition,
 193, 291, 342
Bougainvillea not flowering, 182; cul-
 ture, 380
Box, clipping, 150, 344
Brahma Pootras, 118; culture book,
 53; not laying, 218; partly feather-
 less, 366; cocks' tails, 399; becom-
 ing fat, 436
Bran as poultry food, 136
Brassia Lawrenciana r. longissima,
 65
Brinjal, 216
Bristol and Clifton Poultry Show, 16,
 36, 37
Broccoli, Carter's Summer, 393
Broodiness in winter, 118
Broods, size of, 186
Broom, grafting, 71
Ending, 225; fruit trees, 298
Bulbs—culture, 87; in pots, &c., 131
Bulbaces, monstrous, 431
Bullfinch Male breeding, hatching
 eggs, 154; asthmatic, 294
Butter from France, 250
CABBAGE SEED SAVING, 298
Cacti, 70; compost, 88
Caladiums—culture, 214; in a cool
 house, 416; esculentum culture,
 315
Calanthe vestita flowering, 339
Calceolaria—beds, 261; compost for,
 182; culture, 175; cuttings, potting,
 150; fertilising, 431; *Aurea* hori-
 bunda, 881; *Henrici*, 342
Caledonian Horticultural Society, 84
Calico—covering for frame, 199; oil-
 ed, 815
Camellias—aphis infested, 297; with
 Azaleas, 216; border-making, 281;
 compost for, 230; cuttings, 150;
 flowers not opening, 167; grafting,
 149; guano water for, 362; leaves
 browned, 247, 315; leggy, 113; ma-
 nure water for, 415; out of doors,
 104, 143, 174, 256; potting, 262; re-
 potting, 199, 331; scale on, 215; seed
 sowing, 281; select, 188, 275; top-
 dressing, 298; unhealthy, 182
Camptopus Mannii, 127
Canary—age of, 186; breeding, 154,
 234; breeding from year old, 76;
 breeding Goldfinch Mules, 40, 57,
 76, 116, 201, 264, 383; colouring and
 staining, 196, 183, 200, 318; coughing
 334; laying soft eggs, 234; ex-
 bound, 250; egg-eating, 266; losing
 feathers, 76; *Lizaras*, 58; nice
 eating young, 302; not pairing, 234;
 Ly railway, 202; and Redbreast's,
 334; removing cock from nestlings,
 264; Show, last, 151; Scotch Fanny,
 Carter in Apple trees, 166
Cannas, 280
Canoeing Poultry Show, 18
Cadecan culture, 61

Carnations—planting layers, 182; re-
 potting tree, 192
Caryota Cunninghamii, 207
Catalogues, Lot forwarded, 80; Co-
 layed, 132
Cats r. *Nemophila*, 289, 328, 339
Cedar of Lebanon, opening of cones
 of, 194
Celery—chooling, 179; defective, 200;
 protecting from worms, 162
Celosia culture, 320
Centaur a jagusina from seed, 71
Cephalotus foliolarius culture, 447
Cercus lividus, 410
Chamaerops excelsa culture, 315, 362
Cherries—Bird, 362; as a stock for the
 Peach, 366; blighted, 315; over-
 vigorous, 50; protecting from birds,
 263; pruning newly-planted, 362;
 unfruitful, 399
Chickens—on a hick floor, 202; dead
 in the shell, 186; early management
 of, 202; food for, 202; hemp and
 canary seed for, 158; lice on, 40;
 mortality of, 202; almost Siamese
 twins, 364
Chimonanthus fragrans as a bush, 144
Chives, 296
Chocolate plant fruited, 79
Chorozema leaves browned, 229
Christmas Rose culture, 7
Chrysanthemums—culture, 128; Gem,
 267; list of, 88; new, 221; as an out-
 door plant, 206; stopping, 298
Cinerarias—blind, 71; compost for,
 182; leaves curled, for out-doors,
 199; seed sowing, 350
Citron culture, 132
Citrus japonica, 192
Clay burning for walks, 122
Clematis—bedding, 149; Excelsior,
 432; seed sowing, 70
Clerodendron Thomsonae Balfourii
 for June, 51
Chanthus Dempieri culture, 231
Climatic revolutions, 385
Climbers for arches, 331; for south
 wall, 229
Cobaea penduliflora, 127
Cobham Hall, 222
Cochin-Chinas—cock blind, 218; tails,
 399; wry-tailed, 154; in combined
 space, 58; laying, 29; pullets laying,
 91; roughness on legs, 58; spangles,
 202; White, 128
Cock not associating, 233
Cockatoo, food for, 294
Cockereels and pullets, 266
Cockscomb culture, 70, 290
Coleogyne crisata culture, 167;
Reichenbachiana, 127
Colchester Poultry Show, 417, 433
Celeus—Queen Victoria, 63; compost
 for, 51; new golden, 307; for a green-
 house, 51; selection of, 331; from
 seed, 51
Collections of plants, 119
Composts, various, 263
Canterbury—for exposed situation, 51;
 in Scotland, 268
Conservatory arrangements, 197;
 wall plants for, 112, 247; tempera-
 ture, 51; Our, 293
Conophagus Horticultural Congress,
 211; International Show, 239
Coping, width for fruit wall, 14
Cordylifera, 342
Cordons, horizontal, 173
Cork Poultry Show, 21
Cornwall, early vegetables of, 25
Coronilla glauca—leaves falling, 12;
 culture, 51; done flowering, 262
Corypha australis culture, 315

- "Cottage Gardens," 114
Covent Garden Market, 13, 32, 50, 69, 87, 111, 130, 141, 166, 181, 198, 214, 223, 247, 261, 280, 297, 314, 329, 346, 361, 379, 396, 415, 430
Cows—winter feed for, 53; early food for, 350
Creve-Coeurs, 91, 334; as layers, 22
Creve Poultry Show, 91, 115
Crocuses—taking up, 131; Orphanidis, 410
Crops, valuing garden, 997
Crotalaria Cunninghamii, 342
Croton culture, 248
Crystal Palace Bird Show, 134, 151; Flower Show, 324, 339, 388; Rose Show, 423
Cucumbers—Carter's Champion, 79; culture, 4, 63, 68, 161, 212, 280, 291, 294, 303, 313, 325, 327; disease, 313; injured by dung steam, 263; failing, 397; fertilising, 247, 280; forcing, 164, 313; frames, 183; for greenhouse, 70; house, 166; leaves yellow, withering, 431; mildewed, 32; Soake, 230; plants from seeds and cuttings, 317; not setting, 315; not swelling, 397; trellis for, 229; ulcers, 397
Currants, Black, on sandstone, 299
Custard Apple culture, 32
Cutbush's spring flowers, 175
Cuttings, propagating by, and cases for raising, 129
Cynophyllum magnificum culture, 139
Cytisus dealbata culture, 315
Cycas revoluta flowering, 385
Cyclanthes—africana, 127; persicum not growing, 83; leafless, 149; seed sowing, 229; culture, 325; treatment of seedling, 363; after flowering, 415
Cytisus done flowering, 262
DADBY-LOGLS, DESTROYING GRUBS OF, 398
Dahlia—cuttings, 213; in pots, 167; select list, 298; tubers, planting, 316
Daisies—cray, 127; culture, 298
Damping-off, 32
Damon tree decayed, 69
Daphnes—composit for, 150; encorum, manuring, 167
Dark room, plants for, 415
Dauls, 131
December plants flowering in, 27; rainfall in, 27
Delostoma deutata, 127
Dendrobium—crassicaule, 292; speciosum at Penllengar, 144
Desfontainia spinosa culture, 199
Dentzia done flowering, 262
Dibbling, 378
Dioscorea alata culture, 393
Dioffenbachia management, 247
Dilke, Sir C. W., 327
Dionaea muscipula culture, 247
Dogs, Mr. 264, 364
Dorkings, 79; chickens cramped, 384; hen with Cochinchina cock, 133; unable to stand, 154; White, 53, 91; Silver-Grey, 135
Dovecote, an ancient, 435; stocking, 284
Dracaea—culture, 218; terminalis flowering, 149
Draining, 48, 53; a kitchen garden, 70
Dublin Poultry Show, 242
Ducks—bass for, 91; eggs, 22; large egg, 364; and fowls together, 366; laying, 364; rearing young, 170; Aylesbury's bills, 133, 167, 302; Musard, 154
Dumfries and Maxwellton Ornithological Show, 19
EARWIGS, TRAPPING, 144
East Indian wild poultry, 209, 232, 248, 316, 416
"Echoes," 224
Edgings for flower beds, 297
Edwardsia microphylla, 182
Eggs, 153; blood, 238; deficiency of, 154; double, 384; too dry, 318; from France, 250; fowls for producing, 154; not hatching, 293, 234; hen eating, 186; ill-flavoured, 76, 118; preserving, 58, 202, 302; producing, 91, 219, 282, 360, 332, 436; soft, 218, 234; thin-shelled, 186, 334
Ela roots, 370
Entomological Society's Meeting, 9, 84, 160, 259, 309, 373
Entry fees, 266
Epacris—culture of, 131; select, 362; shifting, 361
Euphyllium—truncatum culture, 3, 61, 125; grafting, 69
Epworth Poultry Show, 332
Eranthemum Andersoni, 342
Ericas to bloom in May and June, 362
Eriocoma marmoratum culture, 199
Eucharis amazonica culture, 131; not flowering, 183; flowering, 199
Evergreens—grass round, 112; for Exhibitions (Horticultural)—Royal Botanic Society's, 193, 291, 312; Crystal Palace, 324, 339, 388, 423; Royal Horticultural Society's, 191, 211, 222, 272, 322, 356, 371, 390, 412
FEATHERS—ERECT, 118; FOWLS EATING, 218, 249, 417
Fernary—plants flowering in, 114
Fercery—fine-foliated plants for, 172; forming of a conservatory, 415
Ferns—cocos-nut fibre refuse for, 230; drying, 150; exhibiting, 432; fronds browned, 132; under a greenhouse stage, 262; culture of Haresfoot, 231; holes on a few, 79; sowing spores, 150; requiring stove heat, 182
Fife and Kinross Ornithological Society's Show, 38
Figs for out-door culture, 292; pruning standard, 347
Filbert trees by water, 131; planting, 351
Finches, rearing young, 334
Fire, management of, 257
Fleche fowls as layers, 22
Floors of brick or wood bad for fowls, 202
Florists' flowers, soil for, 147
Flowers—sizes of pots, 175; pots for exhibiting in, 305; shows, 305, 323; arrangement of cut, 359, 404, 290
Flue—cleaning, 347; heating a greenhouse, 14
Foods for poultry, 299
Forcing, night temperatures during, 351
Forking between crops, 377
Fowls—for confined space, 76, 170; food for, overfed, 170; feather-est, 231, 282, 398; for a cold district, 266; plucking each other, breathing with difficulty, 284; and Ducks together, 366; dying suddenly, 400
Fraser, Mr. E. F., 47
Fraser, Mr. James, 244
Frost and ice, 85; late, 356; in May, 376
Fruit—growing for market at Little Sutton, 156; for market, 416; packing, 142, 160; prospects, 295, 285, 310, 414; in Norfolk, 321, 388; Trees—culture of hardy, 203; drying, 248; garden planting, 235; grafting, 112; heading down, 85, 262, 352; mossy, 167; neglected, 431; newly planted, 83, 336; pinching terminals, 347; protecting, 51, 149, 150, 199; How shall we prune? 139; shoots deficient in buds, 81; stocks for, 40; summer stopping, 317, 307, 403, 422; unfruitful, 215
"Fruits a cultivator," 82
Fuchsias—failing, 346; fulgens not flowering, 346; guano water for, 313; large, 322; leaves discoloured, 363; propagation and culture, 147; Riccordia in New Zealand, 295
Fumigating, 229
Fumigator, a new, 425
Fungi, parasitical in hotheds, 111
GAME FOWLS, 72; BREEDING, 95; characteristic, 170; preparing for exhibition, 76; White, Japanese, 284
Gardeners' Benevolent Society's dinner, 195
Gardener, how to become a, 326
Gardenia culture, 112
Gardening in the West, 10, 47, 66, 108, 177
Gas—heating a small greenhouse, 431; lighted corridor, plants for, 215
Gas lime, 359
Geese, Toulouse, 400
Gentiana—latipapira stragling, 38
Gentians, and their culture, 176
Gesnera—exoniensis, 102; Donkelastr pruning, 331; refutious culture, 182; zebraia not flowering, 151
Ginger culture, 14, 121
Gishurst Compound, 83
Gladiolus—bulbs, 397; taking up, 33; cruentus, 410; early-flowering, 51; International Show of, 206; seed-saving, 231
Glass—Hartley's rough plate, 166; double walls, 270
Glazing, 131; laps too wide, 14
Gloxinias—culture, 213, 416; in a greenhouse, 184; legacy, 331; potting, 83; springing, 229
Golden Pheasants' eggs, 413
Goldfinches, 18; violent in his cage, 76; Mule breeding, 154; rearing young, 334; white-legged, 384
Gold bsn—dying, 94; feeding, 302; encouraging their water and feeding, 400
Gomphrena culture, 320
Gooseberry trees—caterpillar, destroying, 397; aphid, 362; pyramidal, 258
Gourds for out-doors, 231
Grafting, 194; fruit trees, 142; wax, 315
Grapes—bunches decayed, 431; partly shrivelled, 380; becoming tendrils, 290; cracking, 337; decaying Espiran, 43, 145; Lady Downe's of last year, 426; Mrs. Pince, 431; Mr. Meredith's, 145; Muscat, 33; ripening
GRAPES—continued.
at Nueham, 25; Hamburgh and Muscat, 215; out-door culture, 5, 9, 29, 43, 65, 81, 292, 374, 409; setting, 237, 274, 287, 351; shrivelling, 316; Tokay Frontignan, 167; Trentham Black, 27. See also VINES.
Grass—edging, 51; sowing, 188; under Filbert trees, 88
Greenhouse—angle of roof, 149, 281; constructing, 111; heating, 71, 183; painting, 182, 331; plants to bloom from November to March, 398; rafters, 88; select plants for, 150, 151; stage for, 166
Greens—throughout the year, 347; for grub in soil, 379
Guano—liquid, 330; water, 397
Guinea fowls laying and chicks, 436
Gunning, 144
HAMBURG INTERNATIONAL HORTICULTURAL EXHIBITION, 94, 193, 294
Hamburghs, 400; Black, 53; not hatching, and points, 436; for exhibition, 284; hens losing feathers, 436; Golden-pencilled, 284; Golden-spangled, 118; pullets' liver diseased, 40; Silver-pencilled characteristics, 76; sowing, 111
Hard-lights, 116
Hants Poultry Show, 55
Hants and Berks Poultry Show, 432
Hares-foot Fern culture, 70
Hares, protecting trees from, 180, 213
Heat accumulated, its effects, 140
Heath—borders, 258; culture of, 131, 111; cuttings, 393
Heating—a house for bedding plants, 363; a propagating house, 30; cheap, 248; vinery and conservatory, 281
Hedge plant for a town garden, 151
Hedychium, treatment of, 281
Helleboms—fertilised for vases in winter, 385; nice culture, 199
Hens—feathers brittle, 366; insects in crop, 281; leaving their nests, 293, 234; nesting but not laying, 202; not laying, 58, 284; sitting overtime, 418; sitting perversely, 218
Herbaceous plants, 30
Hewitt testimonial, 118
Holly hedge, planting, 289
Horseradish, cradicating and planting, 250
Horticultural (Royal) Society's Annual Meeting and report, 62, 97; Committees and General Meetings, 46, 129, 133, 183, 239, 273, 308, 340, 358, 371, 402; Committee prizes, 34, 326, 394; Cucumber prizes, 226; Exhibitions, Spring, 191, 272; Great Summer, 191, 390; Manchester, 211, 222, 422; Pot Roses, &c., 322; Special Prize and Pelargonium Show, 356; gardeners' examinations, 44; Journal of Meeting of Council and Exhibitors, 308; Variegated Pelargonium Essays, 358; Vice-Presidents, 145
Hotheds—dead spray for, 110; temporary, 297
Hot-water heating, 491
Hottel, 284, 285; shortening spurs, 302; cock's tail, 202
Hull Poultry Show, 263, 348, 364
Hyacinths—Dutch, prizes for, 121; after flowering, 131, 215; Feathered, 315; forcing, 110; in glasses, 131; spikes dying, 315; with two spikes, 191
INERIDELLA ROTUNDIFOLIA, 65
Ice house, 82
Indian-corn meal for pigs, 158
Indian-rubber plants' leaves falling, 132
Insects and their enemies, 207; destroying, 300, 397
Ipswich Poultry Show, 399
Iris—from Egypt, 262; stylola, 342
Ivy fence, 223
Ixia culture, 363
Ixora coccinea culture, leaves scorched, 88
JACKMAN, MR. GEORGE, 145
January, plants flowering in, 105
Japanese seeds, 292
Jasminum—grandiflorum flowers not opening, 347
Judas Tree propagation, 112
KEMPFERIA PARISHII, 207
Kalmias, potting for forcing, 406
Kalanchoes, compost for, 388
Kendal Poultry Show, 73
Kennedyas, compost for, 331
Kent and Surrey Poultry Show, 169, 200
Kidney Beans, late sowing, 416
King's Lynn Poultry Show, 168
Kirkcaldy Poultry Show, 33
Kitchen garden crops, 256; seeds, list of, 103; vegetables, a few good, 62
Kumquat, 122
LABELS NOT RECEIVED IN TIME, 186
Lackey moth's eggs, 32
Lactometer, 418
Ladybirds, gardeners' friends, 216
Lane's show of spring flowers, 256
Langholm Poultry Show, 18
Lapageria rosea, compost, 199; hsrdis-bess, 131; propagating, 51
Larks—distinguishing sex, 234, 264; management of cages, 500
Laurel, the Colchist, 39
Laurustinus, to cut back, 231
Lawn—browning in summer, 51; coarse grass on, 280, 350; fungus on, 33; mossy, 143; sowing grass seeds on, 32; weedy and bare, 50, 70, 112
Laying, pullet dying after, 202
Leaves—autumnal colours of, 405; blighted, 416; blistered and mildewed, 144
Leeds Gardeners' Benefit Society, 28
Lemons, grafting seedlings, 150
Lice on Spanish fowls, 138
Lichens on trees, 41, 166
Liquor-barren culture, 199
Lilacs—forcing white, 167; renovating old, 315
Lilies—compost for Belladonna and Jacobaea, 398; reporting, 51
Lilium auratum—culture, 14, 270; compost, 33; sowing, 132, 431; lough-burn culture, 199
Lime as a manure, 131
Lindens' Nursery at Brussels, 161
Liquid manure, 262, 299
Livers of fowls diseased, 113
Logania floribunda, compost for, 363
Lomaria ribba, 167
Lycopodiums—reporting, 131; for greenhouse, 182
MADESFIELD COURT, 392
MAGGOTS in pots, 151
Magnolia unguiculata, 281
Manchester Fair, 199
Maidstone Gardeners' Improvement Association, 311
Maize as a garden esculent, 155, 207, 244
Manchester Poultry Show, 21
Manchester—to the front! 175
Mandevilla saxatilis—compost, 331; culture, 197; seedlings, 298
Mange, pointer suffering from, 170
Mango in Australia, 126
Mangold Wurzel, insect on, 431
Manley Hall, 6, 80
Manure water for air-moistening, 239
Marranta zebraia culture, 150; leaves yellow, 147
Marble statuary, to clean, 281
March, plants in flower, 255
Market gardening about London and Paris, 2, 145, 286
May, plants flowering in, 393
Mealworms, breeding, 400
Mealy bug, 199
Melon—culture, 58, 109, 298, 347; frame, 112, 183; in a fine-hatched pit, 229; for out-door culture, 167; ridge growing, 337, 407; for show, 167
Melrose Poultry Show, 153
Mesembryanthemums, wintering, 63
Meteorological notes, at Linton, 44; table, 149
Meteorology of 1888, Saffron Walden, 79
Metropolitan plant decoration, 387
Meyenia erecta culture, 182
Mezeron, its merits, 187
Mice, trapping, 258; and rats, 413
Mildew, 199
Mignonette, compost for, 238
Mistletoe culture, 125; on the Peach and Ash, 280
Monochetum multilorum (propagation, 230
Monstera deliciosa, 61; fruit, 33
Moss in flower, 191
Mountain Ash, sowing and planting, 397
Mowing slopes, 362
Mulberry blossom, 397
Mulching fruit trees, 182
Mules, and Mule breeding, 40, 57, 76
Musa Cavendishii in conservatory, 88; fruit ripening, 346
Mushrooms—in winter in the open air, 7; simple mode of growing, 26; culture, 63, 126, 261, 286; structures, 126
"Mushrooms, How to Grow," 257
Mysore Agri-Horticultural Society, 272
NANTWICH POULTRY SHOW, 114
Narcissuses rooting outside pots, 51
Nectarine shoots diseased, 321
Newark Poultry Show, 54
Newchurch Poultry Show, 31
New Year, a few words on the, 1

- New Zealand Spioach, hardness of, 360
 Nierembergia culture, 431
 Nixingales—Scarlet Virginian, 350; rearing, 884
 Notices of discharge, 14; to leave, 119
- OAKHAM POULTRY SHOW, 16
 Oldenlandia Kramerii, 410
 Oldenlandia Pinnatifida, 85
 Oldham Poultry Show, 76
 Oleander scale, 51
 Onocidium crispum culture, 167; xanthodion, 127
 Onions—growing for exhibition, 201; growing large Portugal, 171
 Orangers, pillar plants for, 182
 Oranges—culture for dessert, 23, 59, 67, 172; manuring, 182, 229; Otatebica, 346; pruning, 182; replotting, 215; scale-infested, 70
 Orchard—evergreens to shelter, 88, 131; Kentish, culture of, 251; the portable, 106, 123, 112, 160, 194, 205, 225, 276, 310, 349, 359, 391
 Orchard—houses, 221, 223; failures, 420; lean-to, 281; management of, 180; Pears in, 380; planting, 188; succession of fruits, 158; trees barren, 280; syringed when blooming, 327
 Orchard—cool house, 140, 219, 267, 292, 373, 385, 401; starting, 132; in tubs, 95, 132
 Otley Poultry and Pigeon Show, 283
 Oxalis crenata, 46
- PACKING FRUIT, 97; FLOWERS, &c., 6, 43
 Paint, black, for vinery, 70
 Painting or not painting, 12
 Palava flexuosa, 292
 Palms, 421; for a conservatory, 13; and their culture, 401
 Pampas Grass culture, 112
 Pansies—Cliveden Blue, 182; dividing, 247; propagating, 364; watering, 350
 Parrot—declining, 94; detecting age, 186; feeding, 366; male and female, 485; not talking, 202; self-plucked, 418, 436
 Parsnips, artificial manure for, 33
 Passifloras—not flowering, 131, 151, 380; carulea not flowering, 380; racemosa not flowering, 151; racemosa training, 316
 Passion-Flower, cutting down, 71
 Paulownia imperialis in flower, 387
 Pea's show of spring flowers, 103
 Pea Powl's eggs, hatching, 186
 Peach—apricots on, 144, 145, 199; Bird Cherry as a stock for, 396; blossom falling, 190; buds falling, 190; culture, 95, 121, 144; diseases, 144; insects, 144, 149, 199, 216, 298; leaves blistered, 362, 415; Mormon, 177; potted, 270; pruning, 150; not setting, 331; shoots diseased, 321; stopping, 150; tree and fruit ulcerated, 426; unfruitful, 328, 398
 Pears—buds browned, 166; corolla persistent, 362; Doyenne du Comice as a pyramid, 51; Easter Beurre from a wall, 84; Fortune, 67; grafting on Medlar, 431; on Whitethorn, 52, 407; leaves blistered, 362; planting, 307; protecting pyramid, 150; ripening, 60; root pruned, 347; unfruitful, 341; for west wall, 88; Henri Capron, 310
 Peas—culture, 260; dwarf, 13; eaten by birds, 71; for planting out, 247; preserving, 366; protecting, 164, 218; supporters, 350; for a working man's garden, 151
 Pegging-down plants, 395
 Pelargoniums—classification of, 122; compost for, 182; Congress, 306; crossing Unique with Zonal, 379; potting cuttings, 150; distinction from Geraniums, 431; flowers, 150; hybridising, 269; to flower in June, 112; in pots, 346; growing seedlings, 248; select, 350; sporting, 331; winter management of, 24, 64, 102, 175
 Bedding—42, wintering in Yorkshire, 144; Bicolor, treatment of, 200; coloured-foliaged, classifying, 362, 387; Ivy-leaved training, 150; Oak-leaved, compost for, 362; Schottii, 356; pots for, 247; Zonals in pots, 346; stopping, 331; dark-zoned for breeding, 330; Tricolors, composts for, 330; Essays on, 358; some Golden, 236; Miss Watson, 290, 307; seedlings not variegated, 132; seed, 1
 Penrith Poultry Show, 133
 Peristerion at the Crystal Palace, 53
 Pewits as vermin killers, 426
 Peziza coccinea, 14
 Pheasants, management of Golden, 400
 Pine seed sowing, 315
 Pigeons—age, indications of, 154; Almond and saddle-backed Fantails, 118; Antwerps, 74, 91, 136, 153, 202, 336; for an aviary, 400; Barbs and Pigeons—continued.
 Owls, 113; Birmingham Columbian Society's Show, 21; Birmingham Roller, 318; canker in 115; crossing Short-faced with Art-Tumblers, 40; in damp loft, 206; diseased, 58, 76, 234; dove house, ancient, 434; stocking, 318; dying in the nest, 381; dying young, 400; eggs, 284; age of setting, 284; Fantails, sex of, 58; of Venice, 188; from the Mediterranean, 91
 Peristerion Society's Show, 29; at Antwerp, 33; pet, 300; portraits, 350; roap in, 138; salt for, 154; sellers, advice to, 332; sex, detecting, 91; dying Tumblers, 418; Turbit diseased, 206; new varieties, 218; wing diseased, 58
 Pilea muscosa, 203
 Pine Apples—bed for, 164; bottom heat, 202
 Pinks Cheddar, 131, 148; planting layers, 182
 Pinus variations, 426
 Pipes—heated in a trench; iron-filling joints, 129; removing gas from hot-water, 149; preferable size of hot-water, 331
 Pits—construction of, 281; r. houses, 198; propagating, 132; for bedding plants, 149
 Plane tree for towns, 27
 Plantain, destroying, 298
 Planting, 31, 147; and preparing for, 379
 Plant-house wove covering, 131
 Plants—origin of cultivated, 210; wintered out of doors, 309
 Plumeria lutea, 410
 Plums—Cherry, 101, 161; tree-deficient, 71, 141; cutting back, 306; heading back stocks, 190; protecting, 71
 Plunging material, 199
 Poinsettia pulcherrima, culture, 204; cuttings, 229; for table decoration, 182; preparation, 71
 Polands—plucked by others, 91; Golden, 3, 13, 202
 Polyanthuses, 130
 Polygala, compost for, 150
 Pomological gleanings, 67, 81, 101, 126, 162, 176, 310
 Ponds, trees to shade, 362
 Pooley's insect-destroyer, 360
 Portraits of poultry and pigeons, 217
 Portsmouth Poultry Show, 114
 Potatoes—acres of grown, 62; at Birmingham Show, 102; clubbing, 370; for cottager's garden, 182; early, 295; disease, 412; is it hereditary? 298; failures, 368, 388; in frames, 110; grafting sets, 455; mismanagement, 397; in pots, 229; raising seedlings, 425; removing shoots from the tubers, 370; sowing seed, 199; thinning stems, 425; tubering without sprouting, 362; Veitch's Early Ash-leaf, 104; close to wall, 182; on wet soil, 181
 Pots—sizes of flower, 175; size for exhibiting in, 294, 308
 Potted plants, surfacing, 247
 Poulterers' Company, 434
 Poultry—what has been and is to be done, 14; catarrh and its remedy, 153; for confined space, 218; in dark place, 234; not feeding, 354; food for, 252; floor, 818; house boarded, 234; late, 423; lost, 334; and their management, 216, 231, 234; misdoings at shows, 15, 16; portraits of, 299; profit of, 138, 152, 154, 168, 202; show official's mistake, 138; regulations, 34; rewarded for weight, 58; yard arrangements, 151
 Primulas, 331; double, 51; to flower in spring, 318; seed sowing, 262, 330
 Propagating—bed, 71; box in greenhouse, 247; in fermenting beds, 165
 Pullets, preventing laying, 302
 Purchasing fowls, 418
 Pyrethrum Golden Feather, propagating, 150
- QUARRY, PLANTS FOR, 70
 Quince stocks, 404; grafting, 71
- RABBITS—AGE OF, 118; ANGORA, 250; caenibol, 74, 232, 293; at exhibitions, 364; food, 331; greens for, 230; hair falling off, 250; at Hall, 364; judging and classification of, 39; judging at Leeds, 39; management, 118, 218, 332; nest, 435; not injurious to pastures, 250; in trees, 104, 180, 215; at Sheffield, 364; water for, 215, 252; young dying, 254, 300
 Radish, origin of the cultivated, 240
 Railways, charges, 399; liability for birds lost, 399
 Rainfall in 1888 at Ribston Hall, 126
 Rain, working in, 128
 Ranunculaceae—culture, 112; planted in February, 190; watering, 330; taking up, 362
 Raspberries from cuttings, 182
 Rats, destroying water, 50, 350, 429
 Rat lead coating of seeds, 196, 222, 258, 377
 Red-leaved plants and birds, 378
 Red River natural products, 390
 "Refugium Botanicaum," 29, 894
 Rhododendrons—border making, 281; after flowering, 13, 331; in pots, 70; sowing, 182; Leggy, 113; on loose soil, 182; light manure for, 630; putting for forcing, 415; raising from seed, 141; soil for, 88, 141, 306; at South Kensington, 472; Waterers', 372, 407
 Rhubarb—forcing, 5, 18, 151; culture, 246; defined, 416; seedling, 230
 Rheumatism for fowls, 158
 Rhizanthemum, 292
 Ridged soil turning, 197
 Rinsing fruit trees, 403
 Rivina levis culture, 112
 Rooster falcat, 281
 Rockwork plants injured by heat, 243
 Roman cement, 302
 Rooting, establishing, 88
 Rooms, plants and flowers in, 49
 Roosting-place, making fowls frequent, 350
 Rosa centifolia, 230
 Rose, Alpine, 111
 Rose of Jericho culture, 13
 Roses—alpine, 221; Banksian not flowering, 383; pruning, 132; bloom cutting, 388; for borders, 70; budding, 112; budding on Manetti stocks, 198, 215, 247; Charles LeFebvre, 299; Cloth of Gold, 403; collection of, 215; colour of petals backs, 158; cuttings, 123, 153, 165; from eyes, 166; hovers falling, 379, 415; forcing, 415; black fungus on leaves, 362; General Jacqueminot weak, 316; Gloire de Dijon as a stock, 149; grafted, 330; grafting for a pillar, 112; standard, 178, 230; growth and qualities of, 362; guano water for, 380; hardy, 330; house for, 211; Lady Franklin, 316; leaves blackened, 140; curled, 362; distinguishing by, 431, falling, 330, fungus on, 362; management, 198; on Manetti stocks, 198, 215, 247, 330; tongueing, 79, 101, 149; Marechal Niel, 43; not flowering, 198; new of 1868, 173; of 1869, 322; in north of England, 407; in pots, 158; cutting for forcing, 415; practicing, 132; pruning, 32, 88, 123, 143, 149, 165, 263; select, 51, 148, 263, 315, 431; seeds and seedlings, 4, 70; sewage for, 331; for a south wall, 348; standard, 88; on their own roots, 77; for a south-west aspect, 167; Tea scented, management, 166; training as inverted candelas, 151; time between budding and blooming, 431; wall, 113, 132; watering, 330; eaten by weevils, 379
 Rubus arcticus, 421
- SACCOLABUM BIGERUM, 392
 St. Petersburg, transit of plants to, 141; International Horticultural Exhibition, 109, 275, 327, 352, 372
 Salt—applying to growing crops, 262; as a manure, 131; for hen-scaring, 223
 Salvia splendens and others, 394
 Sarcocolla culture, 347
 Scale insect, destroying, 397
 Scarlet Runners, old plants of, 71
 Scilla sibirica, 166
 Scour in fowls, 136
 Scraps, American, 22
 Screens, evergreen for, 32
 Senecals—renovating beds, 298; culture, 246, 260; cuttings, 182; planting, 182
 Sedums for bedding out, 419
 Seedlings in a greenhouse, 131
 Seeds—adulteration of, 8; coating with red lead, 196; home-saved, 51
 Seedsmen's lists, 256
 Selaginellas, 188
 Selkirk Poultry Show, 135
 Sensitive Plant culture, 304
 Sewage water, effects of, 213
 Shading, 314; a greenhouse, 247
 Shallot culture, 151
 Shamrock, 230
 Sheffeld Original Fancy Rabbit Show, 38, 364
 Sherbardswell Poultry Show, 263
 Shrubs and shrubberies, 31
 Silkmoths' eggs, 366
 Sinningia guttata pruning, 331
 Siskins breeding in confinement, 284
 Slugs and frost, 86; exclaiming, 216
 Smith, Rev. Dr., 376
 Socks, distressing, 362; and frost, 86
 Snowdrops, taking up, 121
 Snow, Mr., 207
 Snow in ice house, 212
 Soapuds—for watering, 298; as a manure, 397
 Soil, improving sandy, 70
 Solanum capsicastrum culture, 26
 Spanish, 381
 Spanish—cock's face, 91; and Minorca fowls, 170; hens, 266; hens eggs bound, 334
 Sparrows, Our 411
 Spinach, New Zealand, 169
 Spring flowers, 23
 Spring-flowering plants, 347
 Spring-gardening aspects, 319, 367
 Stapelia hystrix, 65
 Stephanotis floribunda, culture, 88; planting out in hot-house border, 159
 Stocks, East Lothian, 150, 173, 195, 207, 234, 360; planting intermediate, 181; double-flowered, 389
 Stone boxes, plants for, 347
 Stove—heating by a, 70; for a greenhouse, 111
 Stove wall, plants for, 112
 Strawberries, 361; barren, 414; propagating from barren, 426; culture and selection, 120, 266, 323, 414, 430; forcing, 69; for a light soil, 166, 377; for market, 166; in pots, 131, 215; select, 189; transplanting, 51; watering, 131; white dust on plants, 563
 Sub-planting plants, 112, 137, 219, 238; list of, 132
 Summer sales, 289
 Sunderland Ornithological Show, 19
 Sunderland Poultry Club Show, 38
 Supply of vegetables, 429
 Sussex climate, 287
 Syringa, roots and suckers, 432
 Syringing, temperature of water, 293
- TABLE DECORATION, 385, 389
 Tacsonia eriantha, 65
 Tacsonia—Van-Volkemi, 298; splendens not flowering, 449; Van-Volkemi, 288; sowing, 151; fruit, 162; not flowering, 347, 368
 Tadoring, fancy, 35
 Tan for Melon pit, 159
 Taxodium variations, 426
 Temperatures, night during forcing, 351
 Tenant removing shrubs, 248
 Thames Embankment planting, 27
 Thibaudia acuminata, 65
 Thorne Ornithological Society's Show, 134
 Thorne Poultry Show, 432
 Thunbergia laurifolia culture, 230
 Tobacco, 166
 Tomatoes—culture, 315; ornamental, 202
 Tortoise in a garden, 216
 Tourney Exhibition, 394
 Towns, gardening in, 27, 64, 81, 117, 178, 195, 275
 Toy-Toy Grass, 221
 Transplanting trees, 86
 Trees—anoated, 166; to shade ponds, 362
 Trellis for fruit wall, 50; iron versus wood, 131
 Trichoplia suavis culture, 167
 Trimming, 52, 73, 89, 113; fowls at shows, 33, 34, 55, 86, 37
 Tropaeolum—not flowering, 230; tricolorum failing, 346
 Truffles, 47; culture, 96
 Tulips—after flowering, 215; bedding, 355, 402; sowing seed, 316; watering, 333
 Tumour, air-filled, 266
 Turf—grubs in, 167, 230; laying, 147, 341
 Turkeys—pens for, 16; the wild domesticated, 67; with clasped toes, 266; rearing, 318
 Turnips—seed grub, 262; for spring, 415
- ULVERSTON POULTRY SHOW, 133
- VANDA INSIGNIS, 207
 Varieties, of fowl, 72; propagating by seed, 336
 Vases—planting, 330; plants for, 385
 Vegetable Marrows, 182; bed, 346
 "Vegetable Kingdom," Rhind's, 207
 Vegetables for market, 416
 Veitch's fruit-tree nursery, 189
 Vent protruding, 366
 Verbena—cuttings, 299; notes on, 120; select, 23, 298; watering and propagating, 104, 174, 255; vireosa in a shot bed, 347
 Veronica seed sowing, 131
 Vinerar, green grape, 302
 Vinery—forcing in, 88; glass for, 290; heating, 112; aspect for, ground, 337; removable ground, 183; planting and cropping, 337; reconstructing, 32
 Vines—arrangement of, 316; bleeding, 151, 205; preventing, 162, 253; bones for, 149; borders, 51, 183; dressing, 331; planting on, 229, uncovering, 199; breaking irregularly, 388; choosing, 215; Ciotat, 51; coolhouse, 223; culture, 260; culture out of doors, 5, 9, 29, 43, 65, 81, 299, 374, 401; inclining, 316; early, 13; eyes, large canes from, 70; failure, 27, 380; flue-injured, 331; forcing, 88; grafting, 131; for a greenhouse, 51; grafts applying, 331; of India, 33; late, 13; laterals irregular and tying down, 79, 298, 358; leaves brown-spotted

VINES—*continued*.

367, injured, 247, reversed, 326, scorched, 397; drops round, 298; lioseed oil on, 224; management, 329; manuring, 380; Maseat of Alexandria in a pot, 14; out of doors, 5; planted in a house, 111; outside, 12; in pots, 14, 229, 270, 298; pruning, 71, 183; Royal Ascot, 216; shoot-removing, 297; for a small house, 262; stopping, 50, 51, 104, 362; training, 299, 316, 397; unfruitful, 32; ventilation for, 347; for vinery, 13; watering, 380; weevil on, 182, 380. *See also GRAPES.*

Vineyard, The, 337

Violets—culture of, 345; in pots, plunging, 431

Vulture hawk, 218, 231

WALLS—DRESSING OLD, 12; GLASS, DOUBLE, 220; plants for a north, 280,

WALLS—*continued*.

for a south, 88, for an east, 140; protecting trees, 212
Walnut trees, 224
Warning, 224
Wasps—destroying, 310; queen, 337
Water—stagnant, 48; level, 129; rain, for fowls, 170; softening hard, 362
Waterer, Mr. A., and Messrs. John, shows of Rhododendrons, &c., 372
Watering, 145, 396; out-of-door plants, 347; substitute for rain, 347; plants, 262
Water-Lily, culture, 115; seed sowing, 432

Weather in 1863, 5

Weeds, 377; destroying creeping-rooted, 245; on walks, destroying, 315

Week, work for, 10, 29, 47, 67, 85, 109, 128, 146, 163, 173, 196, 211, 226, 244, 259,

WEEK, WORK FOR—*continued*.

277, 295, 312, 327, 344, 360, 376, 394, 412, 428; doings of last, 11, 30, 48, 68, 86, 110, 128, 146, 164, 179, 197, 212, 227, 245, 260, 278, 296, 313, 328, 344, 361, 377, 395, 413, 429
Weevils, destroying, 111
Wellingtonia gigantea culture, 162; transplanting, 215
Wheat-destroying insect, 71
Whitehaven Poultry Show, 90
Whitethorn as a stock for the Pear, 407
Wild flowers, early, 122
Willows—cuttings, 229; planting, 229; weeping, 150
Window plants, 88; gardening, 147
Wind, the north-east, 403
Wine-making, 409
Winter flower bed, 101
Wireworms—in Vine-borders, 130; destroying, 163

Wistaria sinensis seed, 331; fertilising, 362
Wolstenhelme, Mr D., testimonial to, 152, 169
Woodlice in Cucumber pit, 13; in tan, 281; destroying, 299; trapping, 404
Worms in flower border, 339
Wrens, feeding, 400
Wright, Dr. Perceval, 84

YEW—GOLDEN, 182; GRAFTED ON IRISH, 182; TRANSPLANTING, 215
York Horticultural Show, 424; Bird Show, 433
Yucca filamentosa, 112

ZYGOPTALUM MACKAYI CULTURE, 197

WOODCUTS.

	PAGE.		PAGE.
Eees' combs in Timor	391	Poulterers' Company's Arms	434
„ transporting	187	Radish, Wild in flower	241
Bee-hives, securing bars in	417	„ „ pods	241
Budding	225	„ „ root	242
Dovehouse, an ancient	424, 435	„ „ improved	242, 243
Grafting crown	209	Rose cuttings	77
„ Roses	178	„ grafting	174
„ side	226	Training, palmette	276, 277
„ whip	195, 209	„ pyramid	311, 348, 359, 393
Heath border at Drumlanrig	258	Vines, leaves reversed	326
Pea supports	390	„ training out-door	210, 211, 374, 375
Pear, pyramid training	311, 343, 359, 393	Watering-pot, French	145
Pot, fruit-tree	107		

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 7—13, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year					
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.						
7	Th	Length of day 8 hours.	41.9	29.2	35.5	17	7	af 8	7	af 4	24	af 2	48	af 0	24	6	40	7
8	F	PRINCE ALBERT VICTOR OF WALES BORN.	41.1	31.1	35.6	14	7	8	8	4	35	3	19	1	25	7	6	8
9	S	[1864.]	41.6	30.9	35.2	15	6	8	9	4	44	4	53	1	26	7	31	9
10	SUN	1 SUNDAY AFTER EPIPHANY.	42.2	30.3	36.2	17	6	8	10	4	47	5	54	2	27	7	55	10
11	M	Plough Monday.	41.7	30.1	35.9	21	5	8	11	4	44	6	20	3	28	8	19	11
12	Tu		42.0	29.8	35.9	18	4	8	13	4	54	7	13	4	29	8	43	12
13	W	Cambridge Lent Term begins.	42.8	31.5	37.1	19	3	8	14	4	17	8	10	5	30	9	5	13

From observations taken near London during the last forty-two years, the average day temperature of the week is 41.9°; and its night temperature 30.2°. The greatest heat was 54°, on the 7th, 1845; and 9th and 12th, 1853; and the lowest cold 8°, on the 13th, 1867. The greatest fall of rain was 0.83 inch.

A FEW WORDS TO ALL OUR FRIENDS ON THE NEW YEAR.

HAVING so frequently written a few lines in these pages on either the old year or the new, I shrink, I own, from writing anything on this New Year, feeling that not only was it the old musician, but it might be the old tune as well. But in a letter just received from 171, Fleet Street, there occurs this kindly passage—"A larger congregation than that in your own church will regret the absence of the looked-for New Year's address.

Can you not afford time for also addressing that congregation which is spread over these isles and the colonies?" After such an appeal it at least behoves me to try, yes, try yet once again.

There was another reason why words of mine seemed unnecessary. The congregation, to use our Editors' phrase, has already been addressed in that lay sermon entitled "Christmas," which contains sentences wise, and kind, and true; and which, unless I guess wrongly, have the Puttbridge Bury ring, and for which I ask yet another perusal by those for whose benefit they were written. It gives me pleasure, as it seems to do many others, to see this periodical so often called "our Journal." I was the father of that phrase in a new year's paper written five years since, and I am gratified to see the title caught up and appropriated so generally. Strange, yet very pleasing withal, did it seem when one, almost a stranger, addressed me in the Trades' Hall, Glasgow, with the words, "Have you seen 'our Journal' of this week? Here it is." "Ours," then it belongs to us—to us readers and writers. It is devoted to our tastes, to our fancies, and not only so, but if it is ours, we belong to each other; and so we do, and this accounts for the friendly spirit shown to each other, to which I can so strongly bear testimony.

Gardening ever claims, and rightly, our first thought and attention. Our gardens cheer and comfort us. "In single and married there is but little difference," said Jeremy Taylor, "single life is solitude, married life is solitude." I accept the definition, and I ask, Are not gardens and works on gardening companions of solitude and cheerers of solitude? In countless instances they are both. Single life and gardening have gone together in all ages. The Essenes were great gardeners, so were the monks and nuns of the middle ages, and so, according to Mr. Hepworth Dixon, are the interesting celibates of the New World, the American Shakers. As to a garden being a solace to the man full of cares, notice how often you see grave-browed, city-looking men in omnibuses bound for the outskirts of London with plants on their knees, telling of villa gardens delighted in and giving delight. I have looked at such men and thought what a comfort your gardens are to you, my friends, and your wives know it too, and if they are wise they coax you to take a stroll with them in your garden, when (that trial to husband's patience) dinner is late. A Wiltshire hotel landlady, in old coaching days, used under those circumstances to say to the waiter,

"There, whip a few newspapers in, they will keep the gentleman quiet." Gardens are better than newspapers.

"Our Journal" is taken by many masters and mistresses, and when read is passed on each week into the hands of their gardener. This is a good plan for both parties. A gardener likes his employers to understand his garden, then his labours are appreciated, and his difficulties understood; then what has cost him hours of thought, and days and nights of care to bring to perfection, whether it be flower, or fruit, or humbler vegetable, is noticed understandingly, and his care and pains are proportionately valued. "I like to work for a master who understands what good work is," said a mechanic. From those to whom a Rose is but a Rose, a gardener cannot expect praise for rearing some gem; hence it is well when masters and mistresses read "our Journal."

And here let me drop a word of advice to young beginners—the young lads into whose hands this paper comes after their seniors in the garden have read it. Visiting recently the orchid-houses and pineries in a noble garden, I asked the intelligent head gardener how he got on with the young lads under him, to whom he must confide a good deal of work, although if they failed or exceeded in duty, he would have to bear the blame. His answer was, "I get on with them very well, if they come to me knowing nothing, and confessing they know nothing; but if they fancy they know something when they really know nothing, they give me a world of trouble. I have now a couple of lads who came to me quite ignorant, and good lads they are, for they are willing to learn, and simply carry out my plans to the letter, and to please me, and will make good gardeners."

Young men! be willing to learn, watch, read, take pains, and do not presume to know before you do know. In the highest things it takes often half a life to understand our own ignorance.

Scierced readers! I hope this year you will turn to our pages and find the needed information. Practical readers! I hope you will do the same, with the same result. General readers! I hope many papers this year will be so written as to catch and interest you, and that the whole tone of our pages will elevate all. A bookseller said to me, unasked, "A gentleman gave up taking THE JOURNAL OF HORTICULTURE at the end of the year, but came to me in February, and said, 'I must have that publication again, I miss it, and cannot get on without it; it seems wanted by all of us, so send it to me.'" I hope this is a testimony that we writers do not labour in vain. As to my own experience, this expression has been in constant use among us in our house for years, "Our Journal never brought anything but happiness to our home." And much reason have I to use that expression when I sit by the winter's fire, and count the long roll of friends made by means of its pages. Perhaps much of the pleasure our readers feel arises from the fact of the undying love of nature which is at the bottom of every heart, and which only wants cultivating. And of all nature the lovely flowers stand next the heart, they look up, and are close to the eye of the child, who falls in love with them at once, and

they entwine themselves around the heart of the old man and woman. The love of flowers in some hearts dawns very early, in others circumstances draw it out, but in all cases it is, love me once and love me ever. Said a clergyman, "The love of flowers came to me in trying to please the taste of my delicate wife. I took the cuttings under her guidance, and to spare her strength, and to please her; then I watched their progress, and so on from one thing to another, and I loved the flowers, first for her sake, then for hers and their own." The love of nature is sometimes marvellously great. Thus you who know old London will remember a narrow, close, half-stifling street, called Little Tower Street; in that street, says Peter Cunningham, Thomson composed his poem of "Summer."

From flowers I turn to poultry, which brings me at once to poultry shows. Here I back up with all the strength I possess the words of "NEMO," "CENSOR," and others, for rascality threatens to spoil our shows, and make exhibiting an impossibility for an honest man or woman. But it must not be. Judges! I ask you in this battle of truth and honesty, against falsehood and dishonesty, to use first your eyes, and then use all your powers of exposure, and spare no one. Our pastime and our pleasure, more sanctioned each year by the educated public, must not be spoiled by a set of dishonest painters, dyers, and trimmers. Let committees always have trimming clauses, and trim the trimmers smartly if they catch them. I appeal to every honest man to help in this—every one who has the feelings of a gentleman, an Englishman, and a Christian; and, by long experience I know that poor men have these feelings quite as strongly as rich men. If this system of fraud is to be continued, then what I have always asserted and felt to be true—viz., that there was no manner or degree of vice connected with our pleasures and exhibitions, will no longer be true. I have contended that men of gentlemanly feeling of all ranks can meet and enjoy, and be the better for the meeting and enjoyment. Let us all determine that it shall still be so. There is a pleasure in competition, but no pleasure to an honest mind when the competition is dishonest. On this subject I will quote a letter this day received from a gentleman fancier in Scotland. Speaking of his visit to the Glasgow Show, he says, "I wish I could describe as I feel, the pleasure I experienced in being with so many of those I saw in Glasgow. My visit convinced me more than ever that such tastes can be gratified and indulged in by gentlemen and Christians, and it is only when those who are not both of these intrude themselves, that improper feelings and practices show themselves."

Another point—let there be no spiteful complaining letters after a show is over. Sometimes I think that committees who have so much labour will be disgusted, and shrink from having shows in future. The judging is decisive, men do their best, and if you have not obtained a prize, be too manly or womanly to write grumbling, grudging letters.

It has, I know, given much pleasure to some readers, that during the last year articles on Fancy Pigeons have been more numerous, more lengthy, and evidently the products of more educated pens. I hope the "art" will increase and be increasingly loved.

Petland is one department in fancy-land. Many who do not show their birds yet delight to sit among them, watching them taming them, and infinitely amused by their habits and dispositions. As to petland, I was taken, at the Glasgow Show, by a gallant Captain, who, to use his own words, "was promoted into the fancy after he had ended the Crimean campaign," and he bade me mark how his pet Barb could be taken out of his cage and placed on his hand and shoulder, the bird not the least disturbed by the hundreds of other birds around him, and the many stranger-faces in the Hall. I found out, too, in the beautiful show of Almond Tumblers, a little hen that again and again put down her well-shaped little head to be caressed by my finger, in spite of the half-jealous menaces of her mate. That little hen was, doubtless, "somebody's darling."

In our 15th of October Number was an account of the Christchurch Poultry and Pigeon Show, Canterbury, New Zealand, and an N.B. at the end saying, "The Fantails were very beautiful and attracted much notice. I think 'WILTSHIRE RECTOR' would have been pleased with them." I thank the writer of those words, and beg to send him, I sitting feet to his feet, he in mid-summer, I in mid-winter, my best wishes for the New Year.

There is yet another class of our readers, those who delight in bees. I own to profound ignorance on this subject, and

thought when I saw an article entitled, "Autumnal Unions," it was a waggish heading to a paper on late marriages, and as I am a surrogate, I thought I might be interested in it. But although I cannot send a word of my own to our bee friends, yet I will give them the words of another, the finest and most elevated and elevating bee-poetry (Shakspeare's excepted), with which I am acquainted. Perhaps the lines will be new to some readers, as Wordsworth is scarcely read so much as he deserves. He speaks of the bee as—

"A statish prudent to confer
Upon the common weal; a warrior bold,
Radiant all over with unburnished gold,
And armed with living spear for mortal fight;
A cunning forager,
That spreads no waste; a social builder; one
In whom all busy offices unite
With all fine functions that afford delight.
Observe each wing! a tiny van!
The structure of her laden thigh,
How fragile! yet of ancestry
Mysteriously remote and high;
High as the imperial front of man;
The roseate bloom on woman's cheek;
The soaring eagle's curved beak;
The white plumes of the floating swan;
Old as the tiger's paw, the lion's mane,
Ere shaken by that mood of stern disdain
At which the desert trembles.—Humming bee!
Thy sting was needless then, perchance unknown;
The seeds of malice were not sown;
All creatures met in peace, from fierceness free,
And no pride blended with their dignity.
Tears had not broken from their source;
Nor Anguish strayed from her Tartarean den;
The golden years maintained a course
Not undiversified though smooth and even."

The last lines furnish me a few closing words. May the course of "our Journal" be this year "not undiversified, though smooth and even," and such, too, the course of the life of every one of its readers. May all our friends meet all their friends this happy season in peace and comfort. May care and sickness be the guest of none during the year's twelve months. In brief, may it be to all

A THOROUGHLY HAPPY NEW YEAR.

—WILTSHIRE RECTOR.

MARKET GARDENING ABOUT LONDON AND PARIS.—No. 4.

SALADS.

THERE are two adjuncts to a French dinner, which, whatever may be the number of courses or variety of the dishes, are never wanting—the *potage* and the *salade*. The former not that fiery compound in which sherry and cayenne pepper fight for the mastery, and which the hotter it is the more the skill of the cook seems manifest, and one is amused to hear the short little cough going round the table as the cayenne enters the throat, but one, sometimes thin enough, but always ungreasy, clear, and palatable; while in the production of a *salade* no cream or condiments, save salt, sharp vinegar, and plentiful supplies of oil are admitted. Now, it matters not when you are at Paris, in the height of summer or the depth of winter, you are sure to obtain a good salad, and of a good salad, of course the chief thing is the foundation. How, then, are these salads obtained? I have already adverted to the fact that this is not the taste of John Bull. In winter, salads are not relished, except by those who have lived and travelled abroad, for they are considered unwholesome, a mistake, as I believe, if eaten in the proper way—a great point; for did I not yesterday partake of a vile compound, in which every atom of crispness was taken out of what was really not bad Endive, by being swum in cream and vinegar?

With regard to winter salading, as a general rule this is a failure in England, or was, for of late years there has been, as far as I can judge, a considerable improvement; and no one who possesses an orchard house ought ever to be without good, crisp, tender salading. The market gardeners, I conceive, know best their own interests, and find other things pay them better; whereas in the Paris market the large supply meets a ready sale, for all classes rejoice in their salading. The winter salads used in France are mainly the Cabbage and Cos Lettuce and the *barbe de capucin*, and these are produced in great perfection according to the following plans.

In every market garden around Paris the visitor sees a large array of bell-glasses called "cloches." Thus, at the garden of Dupont, at Clichy, which is not more than three or four acres

in extent, there were six thousand of those cloches, and they were in the winter the protectors of twenty-four thousand Lettuces, for the plan is to plant three Cabbage Lettuces and one Cos Lettuce under each. The cloche is made of very rough and coarse glass—in fact, what remains in the vat after the finer material is run off; they are consequently very cheap, costing not 80 centimes a-piece—that is, about 7½d., and are about as wide as high—viz., about 16 inches. The plan which I have seen most generally adopted is to make beds 4 feet wide, the length varying according to the character of the ground, and then to place these cloches across, and so continue until the bed is full. For the production of the salads in the depth of winter great nicety is required. The cloches are really hermetically sealed, for they are pressed firmly in the ground and a large quantity of manure placed round them. The height of this will vary according to the severity of the weather, but they rarely have to be heaped up more than half way. There is no damping or fogging-off, and nothing can exceed the crispness and delicacy of salads thus produced. As they are wanted the three Cabbage Lettuces, the true "*laitue*," are gathered; and the Cos, or "*romaine*," left to grow, where, under the influence of the rich light soil in which they are planted, they attain a very considerable size, and are of the most delicious crispness and flavour. These come in later, for as a rule the French prefer the Cabbage Lettuce in the winter months. "Why, then," exclaims some puggish Bull, "do not the London market gardeners produce the same? Why cannot my friend Boodles have my cloches, and grow winter salads that shall astonish my neighbours the Snookses?" On my return from Paris last summer I went to Phillips's in Bishopsgate Street on this subject, but I found that the cost of packing the cloches would be more than the cost of the cloches themselves, and that, consequently, it would not pay them to make them. They would be glad to do so, as it would get rid of the refuse material; and as I have already said, the demand is not sufficient to induce the market gardeners to go in for cloches to that extent, or to grow salads to the exclusion of other crops, more paying because more generally used. Nothing, it seems to me, can be more absurd than to point to these fine winter salads of the French market gardeners, and say how very much superior to the English they are. As well might I take a Frenchman through the rows of splendid Celery around Fulham and say, "See what poor gardeners the French are! Why, you see nothing of this kind around Paris." Or, suppose you were to take him through Mr. Myatt's Rhubarb gardens, and say, "Where is there anything like this about Paris?" There this wholesome vegetable fruit is unknown. A Frenchman would as soon think of eating it as he would of taking a cold bath, which he regards as a special mania of the English. No, it is simply demand and supply that rule these matters; and if ever winter salad become as plentiful in England as it is in France, I venture to say that our market gardeners will soon show that whether with or without cloches they will quite equal their foreign brethren.

Barbe de capucin is almost unknown in England, yet I can testify that it is a most excellent adjunct to a winter salad, although it hardly forms one of itself, but with the addition of Celery or Beetroot it is very good. It is, as I have previously said, simply the common Chicory, perfectly hardy and most easily grown. The seed should be sown at different times in the summer, and the plants transplanted into rows in good deep soil, taking care in doing so not to break the tap roots. The plants may then be allowed to grow, and may be treated in one of two ways, each of which will answer—either to dig the roots up and start them in a dry place in sand like Carrots, or else to leave them in the ground. In either case you may take at different times, according to your wants, some roots, place them in deep pots filled with any kind of soil, and then put them in a dark place, cellar or Mushroom house. The roots will then soon begin to shoot, and the blanched leaves, when about a foot long, are cut off, and the roots thrown away. I have this year, notwithstanding the dry season, grown it remarkably fine, and am now using it, having blanched it in an underground cellar. The French in their love for salads press many things into their service, but few of them can compare, I think, with this.

The production of summer salads is also carried on successfully about Paris, as, indeed, we know it is about London; but of this I hope to treat in a separate paper in considering the rotation of crops, in which there is a marked difference in the two countries; and I am inclined to think, after all that has been said and written, that in the matter of handling the

ground and obtaining the most from it, our market gardeners have little to learn from their French brethren. But of this more anon.—D., Deal.

CULTIVATION OF EPIPHYLLUM TRUNCATUM.

I look upon *Epiphyllum truncatum* and its varieties as the most useful of the extensive family of Cactaceæ. The beauty of its flowers, the adaptability of the plant to a variety of decorative purposes, its tractability to almost any form, and the certainty of its giving a good return for any care bestowed on its culture, are recommendations which should insure it a place wherever flowers are cherished. The period during which it is in beauty, gives it an additional claim on our attention. From Christmas to Easter is a season when the ordinary charms of flowers seem doubly charming, yet during every day of this period by having a sufficiency of plants, and, of course, corresponding convenience, and by a little management, its beautiful flowers may be had in plenty. To grow this plant to the greatest perfection, well-heated structures specially erected for plant growing, are no doubt requisite. These erections are by no means common. It is to the great majority of the plant-loving world, whose gardens rejoice in but a vinery and greenhouse, that these hints on the cultivation of this plant are specially offered.

The plant is propagated by cuttings, which may be put in as early as possible in summer, when a night temperature of 60° can be secured. Select for this purpose small branchlets from 2 to 3 inches long, and sever them from the plant at a point where the flesh is somewhat hard, and presents a brownish appearance. If very succulent, it is well to lay them on a shelf for an hour or two, to let the wound dry. Soil for the cuttings should consist of nodules of peat, rough leaf mould, broken crocks, and charcoal, well mixed with silver sand. The material cannot be too open for this purpose. Insert one cutting in the centre of a small pot, or several round the sides of larger pots, securing them at once to small sticks to keep them firm. Place the pots in saucers, and set them on a shelf in the sun; keep in the saucers a little, but only a little water, which will rise by capillary attraction, and will afford sufficient moisture for the rooting. When the cuttings have rooted pot them singly in 3-inch pots, using the same compost, only it may be a little finer. If a Cucumber or Melon frame is at work, a place in the frame will be very suitable. They will soon be established, and if put in early in the spring, and their growth encouraged until the middle of August, and then ripened by withholding water, and placing them in the full sun, many of the plants will produce from four to six flowers during the winter and spring months.

Few plants are more suitable than these little *Epiphyllums*, for use as a fringe round suspended baskets filled with bulbs for room decoration. When this was a part of my duties, I grew them by dozens for the purpose, and they were always much admired. If not required to bloom in such a small state it is well to keep them growing as long as possible, drying them only to pass them through the winter months.

In the spring, when fairly in growth, not before, the plants may be shifted into 5 or 6-inch pots, enriching the compost by one-fourth of thoroughly decayed well-aired cowdung, using plenty of rough charcoal round the collar of the plant to allow of the water passing this part freely, the plant being there somewhat susceptible of injury, by any lodgement of water. Stand the plants in a position where they can receive the benefit of heat and light, and water sparingly until the roots reach the sides of the pots, but when fairly established, and in full growth, they will require copious supplies. Occasional syringings, when in the most vigorous growth, will benefit them.

Towards the middle or end of August, and at a time when the terminal leaflets are on the point of being fully developed, gradually withhold water, and stand the plants in the full blaze of the sun, but protecting the pots from its direct and burning rays. Mere extension is no longer required, but a secretion of organisable matter preparatory to the formation of flower buds. Syringe overhead at times in preference to giving much water at the roots, and this only to keep the plants from shrivelling. House the plants before heavy rains—that is, if they have been turned out, for it is immaterial whether they are in-doors or out, so long as they are exposed to intense sun, and they will begin immediately to knot for bloom. When in this condition, by keeping them dry and cool, they may be maintained in a

comparatively dormant state for many weeks, and if brought into warmer quarters as required, and generous treatment given, a supply of flowers may be kept up for some months. Plants in pots of the sizes named, and well attended to during their two seasons of growth, will be most useful for general decoration. For vases and sitting-rooms they are most suitable, and for table-decoration few things are more elegant and appropriate; at least one, but more often two, pendulous blooms at every terminal leaf will clothe the plant with a rich glow of colour, which is very effective by gas or other artificial light. After blooming, give the plants a rest of some weeks by again keeping them cool and dry, and they will grow far more vigorously than if pushed on immediately after blooming.

If the plants are required to be kept small for certain purposes, they may be retained in the same pots another season, and they bloom well without much increasing in size. The plants from the suspended baskets may be kept for the same purpose another year if potted in small pots, and kept somewhat late before starting them into growth. If, however, large plants are required, they must be shifted on as before, only using soil still richer. Three parts sound turfy loam and one part old mushroom-bed manure, well intermixed with lime rubbish, bones, and charcoal, will be found a very suitable compost for established plants. The leaves will be more fleshy and of greater substance, and the blooms finer than if grown in a more peaty and lighter soil, as recommended for smaller plants. When established in full-sized pots, the annual removal of 2 or 3 inches of the soil, and replacing it with a top dressing of rich compost, will keep the plants in good blooming constitution for several years. This should be done in the spring, on the commencement of the plants' growth. The plants can be staked to any form, the pyramidal being the most suitable and natural.

I have hitherto treated of the plants on their own roots, but they may be grafted advantageously on other stocks. *Cactus speciosissimus* is suitable, but the best of all I have tried is *Pereskia aculeata*, which belongs to the same natural order of Indian Figs. The *Pereskia* strikes from cuttings most freely, and if grown in the same soil and temperature as recommended for *Epiphyllum* will form good stocks after one year's growth, and very good ones if grown over the second year. *Epiphyllums* worked on this stock at any desired height speedily form fine pendulous heads, and are indeed fine objects for conservatory decoration.

Grafting is a very simple affair. Let the stock commence growth by making a few leaves, before heading it for the operation. Any of the various modes of grafting may be adopted; the simplest—and it is as effectual as any—is the crown or wedge. When the stock is headed down, with a sharp knife make a slit down the centre, and wedge the slit with a cutting of *Epiphyllum* made to fit exactly, taking care to leave the bark on at least one side of the wedge, and fitted exactly to the bark of the stock. Secure the graft to a stake tied up the stock to keep it perfectly steady; tie the graft in with worsted or matting, not too tightly, and bind round a little moss. Keep the plant in a warm moist place, occasionally damping the moss, and in a few weeks the union will be complete. Heat and moisture in summer, light and dryness in autumn, coolness and dryness in winter, are essential for this class of plants. These in a sufficient degree are at the command of all who have a vinery, or even a greenhouse, for with care I have had a fair bloom with but the assistance of the greenhouse, but it takes a longer time to grow good plants than by having additional heat.—J. W.

ROSE SEED AND SEEDLINGS.

HAVING read with great interest the communications of Mr. Curtis and Mr. Laxton on Rose seed and seedlings, I went round my garden and collected fifty-seven pods of the following Roses, with the intention of trying to raise "a variety"—viz., Madame Julie Daran, Sombreuil, Duc de Cazes, Charles Lefebvre, Senateur Vaisse, Madame Boutin, Dr. Jamain, Maurice Bernardin, Duchesse de Caylus, La Baronne Adolphe de Rothschild, Prince Camille de Rohan, and Pierre Notting, all capital Roses. I believe, however, a man may sow a bushel of seed before he will raise a Rose worth his trouble. I have not much faith in manipulation. Unless gauze is kept over the flower I believe bees fertilise it before we insert the pollen. I fancy insects are the best hybridisers. Our climate is not generally suitable for the production of Rose seed. Last summer was a good one for the purpose. It is rare that full Roses

give seed. The "nearly full" Roses are the best seeders. Among the above, Pierre Notting and Madame Julie Daran are the fullest. If I raise a good Rose I expect it will be from one of these. Sombreuil is the best white Tea to breed from.—W. F. RADCLIFFE.

CUCUMBER CULTURE.—No. 3.

EARTHING THE BED.—Soon after the plants have been planted out they will begin to extend their roots through the hillocks, presenting their extremities at the side. These must be covered with soil as they appear, the soil being placed within the frame a few days previously to become warm before covering the roots with it. This should be repeated frequently, as the roots present themselves. The bed should at all times be kept so far earthed as to afford space for training the plants; but it is desirable in the early part of the season not to earth too much of the bed at once, in order to permit the heat to ascend freely and so secure the needful top heat, which, in the case of a bed fully earthed soon after being made, is apt to become deficient. Later in the season this is not of such consequence, as the days are longer, and the sun heat greater, and on that account the bed may be fully earthed over in a shorter time than earlier in the season. As a rule the bed ought to be earthed to the full extent when the plants half fill the frame. The depth of soil should not be less than 9 inches, and need not exceed 12 inches, but on a dung bed I consider 10 inches a sufficient depth. The soil should be made rather firm, but avoid treading it, and if rather rough all the better.

It will be noticed in earthing that rootlets are being put forth from the stem of the plant, and these, if covered with soil, will extend and contribute to the vigour of the plant. It is desirable thus to cover them, for doing so raises the soil near the collar or neck of the plant, and in watering the moisture will drain from and not to the plant. The soil, therefore, should slope from the plants, they being slightly raised in the centre of each light.

WATERING.—The water employed should be of the same temperature as that of the soil in which the plants are growing. Before watering it is well to dip a thermometer into the water, and, if necessary, bring the latter to the proper temperature by adding boiling water. It is a common practice to use water several degrees higher in temperature than the soil, and this is a frequent cause of knotty roots and disease. Water used so warm unduly excites growth and causes weakness rather than vigour; and on the other hand, water much colder than the temperature of the soil checks the growth of the plants, and the foliage will flag frequently from this cause, quite as much so as if the soil were deficient of moisture. If the temperature of the soil be too low, or lower than it ought to be for the successful cultivation of the plants, then the water may be 2° or 3° warmer than the soil, but on no account colder, as in this case it would only still further lower the temperature of the soil and check growth. If the soil is too warm then the water may be 2° or 3° colder than the soil, as it will tend to lower the temperature of the latter, and may on that account be desirable. Such cases, however, are best dealt with when only temporary, and it is to these that the foregoing remarks are intended to apply, for if the temperature of the soil is unsuitable the plants will not long be healthy and fruitful.

The plants require to have the soil always moist, and it should be regularly so, for no plant suffers so much from a deficiency or superabundance of water as the Cucumber, nor so speedily shows the ill-effects. The soil should not become so dry as to cause the leaves to flag, and yet water ought not to be given until it is dry, but then give a good supply sufficient to moisten the soil to its full depth in every part. The demand will depend on the weather and growth of the plants. More will be required and oftener in fine bright weather than in cloudy, dull, or cold periods; and early in the season it should be given in the morning from nine to ten o'clock, the lights being shut down for a short time, or until the foliage becomes dry, shading for some time if necessary to lessen the evaporation and prevent the plants receiving a chill, then admitting air gradually as required. After April, unless the weather is frosty, watering is best done about 4 p.m., the lights being closed; and if the sun is powerful spread a thin mat over the lights for about an hour, then remove it, but do not give air, as the vapour will be a means of checking the attacks of red spider, and a rise in temperature after the watering tends to increase the vigour of the plants. In hot dry weather the water may be given over the foliage, wetting every part, but in dull weather it is

well not to wet the foliage, as doing so is apt to cause too great succulency of growth; the watering at such times should be without a rose, but in fine weather a rose watering-pot is best. It is well to keep the stems of the plants dry, as well as the soil for some distance round.

It is not necessary to syringe Cucumbers when grown in frames or dung beds, as the evaporation from the soil in most cases supplies enough of moisture to the atmosphere, but in very hot weather it is advantageous at the time of closing or shutting down the lights to sprinkle the foliage overhead with water through a fine rose. Though this is desirable in hot weather, in order that the plants may recover more speedily from the loss occasioned by the excessive evaporation, in dull weather it is undesirable, as it encourages the production of large flabby leaves so succulent as not to endure hot sun; therefore, syringe or sprinkle the plants overhead in dry hot weather only, and at the time of shutting up, so that they may have the full benefit of the moisture, and have their foliage dry before it is again exposed to powerful sun.

VENTILATION.—Air should never be given with the view of lowering the temperature, but to prevent its becoming too high. It should be given before the temperature becomes too high, and then in such proportion as not to reduce it; indeed, the heat, on the proper principle of air-giving, should increase rather than decrease after air is admitted, or rather air should be afforded in such proportion to the heat of the frame and that of the external air that the heat will progressively increase. As a rule, a little air should be given when the temperature is above 75° and not exceeding 80°; and the temperature increasing, as it ought, the opening for the admission of air should be greater as the temperature becomes higher. The temperature with sun heat may rise to 90°, which, if accompanied with air progressively furnished, will not distress the plants; but if the temperature be allowed to rise to 90°, and air be then admitted in quantity, a reduction of the heat will take place, and the plants will receive a check in consequence, and the foliage will in extreme cases of this kind flag from the hot moist air being suddenly replaced by cold and dry air. The above remarks apply more particularly to the early part of the season when air requires to be very cautiously given, as the difference between the temperature of the external air and that of the frame is then greatest, and the plants, being young and tender from growing in a warm and moist atmosphere, are most susceptible of the contending influences of cold and dryness. At such times the hot air of the frame is soon displaced by the cold air, which, becoming heated, takes up moisture more readily, and the surface of the leaves is not only too suddenly cooled but dried. As little air, therefore, as possible should be given at such times, and only for the purpose of preventing the temperature from becoming too high, and the foliage from becoming thin and flabby through being grown in too confined an atmosphere.

Cold draughts should be guarded against, as they are very injurious, especially in winter and early in spring. The evil effects of cold air may to some extent be mitigated by placing over the openings two or three thicknesses of hexagon or woollen netting. This will prevent a too rapid egress of hot, and ingress of cold, air. These precautions will not be so necessary in summer as in winter, nor in mild weather as in cold, but the greater care taken to give the plants a change of air without depriving them of the moisture or heat so essential to their healthy growth, the better will be the result.

Air cannot be given too soon after the proper temperature has been attained, and it must be in such quantity that the heat shall rise with the increase of solar light and heat, and as the latter declines the ventilation must be lessened, and, if need be, entirely suspended when the temperature falls; if the temperature of the air in the frame should rise a few degrees after the lights are closed, it is better than allowing it to become too cold before the lights are closed. Ventilation should be admitted by raising or tilting the lights at back, and not by pushing them down, which causes a draught always more or less injurious.—G. ABBEY.

GRAFTING A VINE—THE CIOTAT FOR OUT-OF-DOOR CULTURE.

I HAVE a Black Hamburg Vine trained in double cordon along the front windows of my greenhouse, and I should like to cut off one branch and graft it with a Muscat Hamburg; the branch is an inch in diameter. Could I do so? Must I

cut it back and graft on new wood? I saw some time ago that persons were speaking about out-door Grapes, but nobody mentioned the Ciotat or Parsley-leaved Grape, which I have seen ripen its Grapes against the wall of my house (and an abundant crop), for the last thirty years almost without failure. The leaves, too, are very ornamental, and useful for table decoration.

I have at this time a pot Peach tree in a lean-to orchard house in blossom, much to my annoyance.—H. FOX.

[You can cut the stem of your Vine and graft as you propose and side-grafting is as good as any. We used to do it with a piece of wood containing two buds, one at the base of the scion, and one at the point, and the best time to graft is just before the sap begins to move. Inarching is performed on the wood of the current year. In your case we would be inclined to plant a Vine at the end of the house and train it up the roof, instead of cutting away half the Vine that runs along the front. We should move the Peach tree in a pot to where the frost would not reach it.]

POMOLOGICAL GLEANINGS.

WE shall soon have TANGIERINE ORANGES as common among us at Pesches. Dr. Newington, of Ticehurst, has sent us some of his own growth, as fine as any we have ever seen, both in size and flavour. What marvellous changes cheap glass has worked in our gardening notions and practice!

THE WEATHER IN 1868.

THE following are extracts from the weather tables kept at Brinkburn Gardens, Darlington:—

Month.	No. of days on which rain or snow fell.	No. of days on which the thermometer was above 65°.	No. of days on which the thermometer was below 35°.	No. of days on which the wind was from the points of N.W. to S.E.	No. of days on which the wind was from the points of S.E. to N.W.	Depth of rain in inches.
January	14	0	22	13	18	1·80
February	6	0	15	7	22	0·80
March	7	5	20	6	25	0·80
April	10	15	14	14	16	2·15
May	3	30	4	1	30	0·80
June	1	30	0	4	26	0·25
July	3	31	0	15	15	0·90
August	10	31	0	3	28	2·60
September	9	26	0	13	17	3·80
October	6	15	15	10	20	1·70
November	9	1	17	21	9	1·50
December	19	2	15	6	25	4·65
	97	186	122	114	251	21·75

The highest temperature registered during the year was 94° on the 2nd of August, and the next highest temperature 91° on the 7th of September. The lowest temperature was 15° on December 30th.—HENRY WAND, *Brinkburn*.

EARLY FORCING OF RHUBARB.

AT page 445 of our Journal, occurs the remark, "Who will tell us how best to obtain good Rhubarb at the end of November or beginning of December?" This is a question that affects most of those engaged in early forcing, and it is very desirable that such questions should be brought prominently before the gardening community and answered in a practical manner, for information would thus be elicited that is at present lost to a large portion of its members.

It is no easy matter to procure good Rhubarb at the end of November and in December. There can be no doubt but one cause of failure is not having the crowns well matured, for I, like the questioner, have at times seen a second or third lot of Rhubarb supersede that first taken in for forcing. For early forcing I find it necessary to have the roots well prepared; three-year-old seedlings which have been grown in favourable aspects and well cultivated are very useful. Stools divided and treated in the same manner answer equally well. Two-year-old seedlings may be taken up, potted in large pots, and plunged in leaf soil or any material that will prevent evapora-

tion during the summer. Supply the plants well with liquid manure and pure water while growing, and endeavour to have them matured as early in the summer as possible, and ready to be removed to the place where they are to be forced, whether it be a Mushroom house, pit, cellar, or other structure. The plants may be either kept in the pots, or planted out in some rich compost, according to the operator's practice. Crowns from stools treated in the same way answer equally well. With the above treatment I have been enabled to obtain good Rhubarb in November and December, and throughout the winter.

When plants are taken from the open ground I choose the strongest crowns, and when they are exhausted consign them to the dunghill, yet with all my care I have at times failed. Perhaps some of the other readers of our Journal will detail their practice in this matter.—M. H., *Acklam Hall*.

PACKING FRUIT, FLOWERS, AND VEGETABLES FOR SENDING BY RAILWAY.

ON the whole we agree with a correspondent, "J. J. A.," that boxes are better than baskets, though there are circumstances in which each may be more eligible than the other. When the material sent is of great bulk, and vegetables form a considerable portion, we have found large, square, stout, baskets very useful, and even strong common hampers answer the purpose. In such cases the vegetables were placed at the bottom and sides—very likely Spinach and other leaves on the top, and the fruit and flowers were packed in boxes and placed in the centre. Where the basket or box is entirely dependant on the porters of the railway, who tumble packages out without having time to look at and read the directions about "care," &c., then the baskets so packed suffer less as respects the fine produce in the centre, from the concussion of a careless tumble out, than they would do in a box, if means were not taken to prevent injury from this cause.

The best means for obviating the effects of rough handling is to have an outside box, to be packed with other smaller ones inside, and the smaller one so much less than the outside one as to admit of plugs between them.

We have frequently used two boxes for the finer kinds of produce, the inside box an inch less all round than the outside one, and in the open space we would insert firmly, by means of moss tied up in paper, four large pellets, one at each end, and one at each side, so that when there was a jar given to the outside box, the moss pellet would take and give. This inside box we have sometimes filled with so many boxes packed separately. At other times we have made this box into three or four divisions by having so many false moveable bottoms, these bottoms being kept in their places by ledges fastened at the ends and sides, so that the moveable bottom would rest and remain there. In general as many thin boxes of wood, tin, or zinc as will fill the box will be the best, as every box will have its own lid; and for most purposes it is better to have the boxes shallow than deep. Thus, for Peaches, the box should be from 3½ to 4 inches deep, and if divided into squares so that each fruit will have a square box to itself all the better. If the Peaches are wrapped in silk paper or cotton wadding, laid on a little dry sweet bran, and covered all over with the bran, shaken a little so that no crevice may be left, and a sheet of paper put on before the light lid is secured, the fruit will go hundreds of miles and never show a speck; but all such fruit when sent long distances should, though ripe, be not over-ripe. We have used cotton wadding alone and the fruit turned out well, and it is more cleanly than the bran. When bran is used, the tissue paper should be twisted or tied so that the bran shall never touch the fruit. We have used fine moss and short grass, well dried and sweet, instead of wadding, but wadding is the best, though rather dear. It may be applied to the fruit at once, if the papery side be placed next the fruit.

Grapes we have often sent in two ways. First, by filling a box full so that the bunches could not move in the least; and secondly, when bloom and freshness were great considerations, placing merely one layer of Grapes along the bottom of the box, the branches resting on a double thickness of soft white paper or cotton wadding, and then the bunches kept firmly in their places by fine cord taken over the bunches in two or three places by means of small holes in the bottom and the sides of the box. To prevent dust a sheet of clean paper may go over the sides and ends of the box before the lid is fastened, the paper, however, being an inch or two at least above the

Grapes, so as not to touch them. Very fine Strawberries do best in shallow boxes with room only for one Strawberry in depth, and each Strawberry placed in a soft leaf in its separate little square box. We have sent fine fruit very well, merely packing them in one layer thus: a sheet of paper, then small Vine or Strawberry leaves, each row of Strawberries having a green leaf below, behind, and in front; in fact, each fine fruit having a leaf to itself, but the rows kept tight and close, and when finished a sheet of paper, or if none, cotton wadding was placed over so as to fit closely when the lid was put on.

In packing flowers, all kinds do best when there is only one layer in the box, and if the blooms stand upright all the better. Packing them too tightly does not answer; using any damp material does not answer, if the flowers have to go far; rather light packing is better than very tight packing, but the packing must not be so loose that the flowers will injure each other by tumbling about. We have found nothing better than setting the flowers about upright, and not too firm as respects the blooms, but making the stalks of the flowers rather firm by using well-dried moss for the purpose. The drier the moss is the better will the flowers journey. The damper it is the more will they be injured and shed, and that in proportion to the length of the journey. We frequently damp a sheet of paper and put it on the bottom of the box, and that with the dry moss does no injury, but when we used moss, &c., at all damp for packing, we rarely found the flowers turn out as we expected them to do. In placing these boxes in the inside box, it is well to have a pellet of moss or wadding at the four corners between each box.

When carrying fine fruit and flowers by rail is a constant affair, it would always be good policy to have the boxes and hampers placed under the particular care of the station superintendent and the guard of the train. The reason will be obvious to every one who has seen the dispatch with which packages are thrown out at the stations.

MANLEY HALL, STRETFORD, MANCHESTER.

THE RESIDENCE OF SAM MENDEL, ESQ.

(Continued from page 458.)

A SERPENTINE walk through some pretty undulating rockery leads to the Rose house, which stands on an elevated piece of ground, surrounded by a pretty alpine garden, filled with all the choicest gems in this most interesting section of plants. The house is 37 feet by 22 feet, has three span-roofs, and is filled with all the choicest Roses that can be procured, amongst which are some very large specimens. It furnishes large quantities of cut Roses at all seasons. As we go from the Rose house to the east side of the grounds, we pass a fine plantation of Oak trees on our right hand, on the south side of the serpentine walk, and on the left or north side, a paddock of about three acres, exactly opposite the south front of the mansion. The conversion of this into a handsome pannel garden, and the erection of a good range of vineries in the kitchen garden, are the only two things necessary to be done in order to make Manley Hall the most complete place, in a horticultural sense, anywhere to be found. The paddock, in my opinion, should be dug out to a depth of 4 feet below its present level, and the soil excavated employed to form fine banks on the west and east sides of the grounds. If these banks were skilfully planted they would completely hide the large block of plant houses on the west side, and the large Azalea, Camellia, and Fern houses on the east side. On the south front the natural scenery could be brought in to great advantage.

At the south-west corner of this paddock the walk divides, one branch leading in an easterly direction to the kitchen garden and fruit houses, the other, towards the north and east, to the large Azalea and Camellia house, which is filled with very large specimens of these popular flowers, together with several New Holland plants, such as *Boronias*, &c. This house is about 170 feet long by 20 feet 8 inches wide, with a division in the centre. In the south division, on the right of the door, were some very healthy specimens of *Boronia serrulata*, a handsome plant which is much neglected; fine plants of several of the best kinds of *Aphelexis*, as *A. humilis*, *A. macrantha purpurea*, *A. rupestris grandiflora*, also many *Epacris* of large size, and two large plants of *Erica Cavendishii* 6 feet high and 4 feet 6 inches in diameter, as well as another pair of specimens of the same plant 4 feet 6 inches high and 4 feet through, all in perfect health. *Epacris Eclipse* and *E. miniata* measured 4 feet 6 inches by 5 feet; *Eriostemon intermedium* and *E. buxi*

folium, 6 feet by 4 feet; *Phenocoma prolifera* Barnesii, *Drapophyllum gracile*, and *Eriostemon scabrum* being likewise very large and healthy. Passing into the other division of this house I found the large Azaleas which have done so much credit to Mr. Charles Turner for several years past. They are in a very flourishing condition, although many thought they would not again be so after the enormous quantities of flowers they bore last year, and the knocking-about they have had. Many persons are also of opinion, that the Azalea, and several other plants will only last a certain number of years, after which they become useless; but this only happens when they fall into unskilful hands, as these fine plants abundantly show. I also know from my own experience, that plants that have remained in the same pots for eight or ten years, during which time they had never been repotted, and had in consequence become very sickly, and to all appearance worthless, have, by simply scattering over the surface of the soil a little of Standen's manure, and paying due attention to watering, &c., become as healthy as they were at any period of their growth. They will produce as fine flowers and as numerous as ever, without retreating, for double the above period, if suitable quantities of this invaluable manure be administered to them every year immediately after they have done flowering. This manure will produce a similar effect on the Camellia, the Orange, and many other plants, if properly applied. Not only is a great saving of labour and room thus effected, but we have a safeguard against any want of care in repotting, as regards the state of the soil at the time the plant is put into a larger pot. The soil in which the plant is growing should be in precisely the same condition in respect to moisture as the new soil. More specimen plants are killed from want of attention to this matter than from any other cause.

The Azaleas are placed along the south side of the walk, through the centre of the house, and on the north side are the Camellias, some of which are very large and most luxuriant, and all are completely covered with flower buds. The large plants are sunk into the ground in square brick pits, considerably below the level of the floor, in order to afford them more head room. The following are the dimensions of some of the Azaleas:—Flower of the Day, 4 feet by 3 feet 6 inches; Brilliant, 5 feet by 4 feet; Cedo Nulli, 5 feet by 4 feet; Louise von Baden, 5 feet by 3 feet; Flag of Truce, 3 feet 9 inches by 3 feet; Ivoryana, 5 feet by 5 feet 6 inches; Coronata, 5 feet 6 inches by 4 feet; Cheloni, 5 feet 6 inches by 4 feet; Variegata, 4 feet 6 inches by 4 feet; Stella, 4 feet 6 inches by 4 feet; Extranei, 6 feet by 5 feet 6 inches; Barclayana, 6 feet by 6 feet; Holfordi, 4 feet 6 inches by 3 feet; Sir Charles Napier, 6 feet 6 inches by 6 feet; Juliana, 6 feet by 5 feet 6 inches; President, 4 feet 6 inches by 3 feet. *Rhododendron Gibsoni* is 6 feet by 4 feet, and completely covered with flower buds. The old Double White Camellia, 12 feet by 10 feet, with upwards of two thousand fine flower buds, is the largest plant in the house; but there are many others of scarcely less dimensions. A bank, 85 feet long, is formed of large and small plants of all the best varieties.

Leaving this house (called the exhibition house) by the north door, and turning to the left we follow a walk leading to the kitchen garden, and by a slight curve to the left reach a straight walk, which passes through the kitchen garden from east to west. Parallel with this walk, and facing the south, is a continuous range of glass 495 feet long, for the cultivation of fruits of various kinds. The Vines and other fruit trees in many of the houses have not long been planted; I need therefore only say, that every care has been taken in preparing the borders, and that satisfactory results may be expected. I noticed in several of them very promising crops of Pines, Dwarf Kidney Beans, &c. In this range there are houses for Pines, Vines, Cherries, Peaches, and Nectarines, all well heated, and all filled with trees in a promising condition.

On the opposite side of the walk there are several span-roof houses for the growth of Pines, Cucumbers, and Melons, and for forcing flowers, propagating, &c. The first of these houses I entered is used for propagating, and is filled with a useful stock, among which I noticed a fine plant of *Dracana reginae*, just beginning to show its silver-margined leaves; the next is the winter Cucumber house, used also for Melons after the Cucumbers are over; and a third is called the summer Cucumber house, the plants in which are destroyed as soon as those in the winter house are in full bearing, and the house used for forcing Roses, Hyacinths, and other plants, for the decoration of the conservatory. The next house is used exclusively for forcing early Roses, and for the cultivation of Melons in sum-

mer; the first lot of Roses had just been prepared and placed in the pits on each side of the walk which passes through the centre of the house. A span-roofed house, 60 feet 6 inches long and 12 feet 6 inches wide, contains a fine collection of Pelargoniums of the best varieties, and a fine lot of Cinerarias. I also noticed a fine healthy plant of *Lapageria alba*. On the south side of this house there is a very useful pit, 6 feet wide, and of the same length as the house, filled with a very healthy stock of shrubby and other Calceolarias. The Pine stove is a fine, and, for the purpose, very suitable house. It is 66 feet long by 20 feet wide, with a large pit in the centre, a shelf near the glass on the front side, and another at the back, and on these enormous quantities of Kidney Beans are forced during the winter. The pit is filled with a very healthy stock of Pines, which are perfectly clean and free from insects. Many of them are planted out, and the suckers are to remain on the plants after the fruit has been cut, as an experiment. On my telling Mr. Petch that this was the only way to make Pine-growing remunerative, and a plan by which he could grow two or more Pines in the space generally allotted to one, he became doubly anxious to give it a fair trial. Of this system of Pine-growing I shall have something to say hereafter; for the present I may state that I have seen the most satisfactory results attend its adoption by one of the best Pine-growers in the world, who has quietly pursued this system for many years, and who has grown some of the finest Pines ever produced. On the back shelf was a fine lot of pot Vines.

A lean-to near the large ferneries is filled with store pots of *Verbenas*, *Petunias*, and various other softwooded plants, and although it has no pretensions to architectural beauty, it is, perhaps, one of the most useful houses in the place. At the eastern extremity of the kitchen garden, against a wall facing the east, there is a house for the cultivation of the Apricot.—J. WILLS, F.R.H.S.

CHRISTMAS ROSE (HELLEBORUS NIGER) NOT FLOWERING.

A BED of this beautiful winter ornament to our gardens, as it now is, quite gay with its large white flowers, or what pass for such, has often elicited the following observation—"We have it, but it will not flower with us." Now, I have not the slightest doubt that there is hardly a spot anywhere in which it may not be made to flower profusely if rightly managed.

I had it formerly in a side border, where it did not flower, but an accidental occurrence led to its being removed and treated so that it has flowered abundantly every winter since. One of our smaller nurserymen took up some plants from an open dry situation, where they had never flowered, and put them in a waste corner, where they were partly covered up by other odds and ends, and here they bloomed freely. This fact led me at once to suspect the reason, and endeavouring to profit by it, I immediately transferred my plants to another situation, where, although the sun shines upon the spot all the year round, they have the advantage of partial shade and plenty of moisture during the summer months. As these plants make and ripen their buds at a time when there is always a profusion of flowers, and plenty of other matters to attend to, they are apt to be neglected and left dry when most needing a little consideration; and hence either do not flower at all, or produce only a few starved and diminutive apologies for flowers.

The plan I have acted upon is this: The plants being arranged symmetrically in an open sunny spot, where in the winter they are in a conspicuous position, and form the principal objects left, in the summer they are thickly planted over with *Fuchsias*, *Pelargoniums*, *Calceolarias*, *Pyrethrums*, &c., so as to be wholly shaded from the sun, at the same time that they receive an abundance of water, as well as a share of the liquid manure and other good things intended for their protectors. Thus, without any special care they receive an additional stimulus at the very time that it is of most service to them. Blooming as they do at a season when there is hardly any other flower to occupy the ground, they are invaluable, and well worthy of more general cultivation.—W. K. BRIDGMAN, Norwich.

OPEN-AIR MUSHROOMS IN WINTER.

On the 22nd of December I gathered eighteen Mushrooms from the outside of a pigeon-hole Melon pit. One of them weighed 1½ lb., and measured 10½ inches in diameter and 2 inches thick. Several of the others weighed rather more

than half a pound. Mr. Frost, the well-known nurseryman of Maidstone, pronounced them the finest he had ever seen flower in the open air. The Mushrooms came up spontaneously.—*G. LEEDS, Gardener to the Mayor of Maidstone.*

ADULTERATION OF SEEDS.

EXTRACTS FROM THE SECOND INTERIM REPORT BY THE ROYAL HORTICULTURAL SOCIETY'S SUB-COMMITTEE.

THE crop of many of the seeds which form the staple of the seedsman's business is always uncertain and precarious in this country. A single night's frost at a critical period may destroy the whole of the crops of Turnips, Mangold, Cauliflower, or Cabbage seed exposed to it. The seedsman thus can never calculate on the supply of the coming year. It may be a failure; and he must properly provide against this by laying in a large stock when the crop is abundant and good. But what is he to do with the large stock so laid up in the case of a sequence of two or three good years? He uses it up by mixing the product of the different years together. By-and-by a bad year comes, but, by the seedsman's precautions and forethought, a sufficient over-supply from previous years remains in stock, and the country is not unprovided. From such occasional intermixture there is a natural and easy descent to a constant lowering of the average. Troublesome questions are put if the seed is found better or worse one year than another. So it comes to be thought that it would be more easy for the seedsman, and less troublesome for the customer, if it were kept always at about the same average, and the price correspondingly lowered; and so the system of regular manipulation and tampering with the quality is introduced.

The next stage of introducing killed seed instead of old dead seed is still more easy. It is obviously much more to the customer's advantage, if the average is to be lowered, that it should be done by the intermixture of clean fresh-killed seed, rather than of old musty seed, full of the spores of fungi and the eggs of insects. So regarded, the introduction of killed seed is a boon to the buyer instead of an injury. There is, indeed, another point of view from which to look at it. The old dead seed betrays its presence; the killed seed does not; and so the purchaser is deprived of that means of testing the quality of the article he purchases.

Everything is thus thrown upon the honesty of the dealer. He fixes the price, he regulates the quality, and the purchaser is kept in the dark, and has no check upon either. This is a temptation beyond what the average frailty of human nature ought in fairness to be exposed to.

It is not to be supposed that the existing system could have reached its present magnitude through the separate and independent action of individuals; it is the combined action of the trade which has done it. At what time it commenced your Committee have not learned; but it is no modern device. Most of the present members of the seed trade have succeeded to it as to a fatal heritage, and they have found themselves constrained to conform to the traditional custom of the trade, or run the risk of sacrificing important and well-established businesses to the ruin of themselves and their families.

The combined action of the trade, which has consolidated the system, has been exerted through a trade's club, or association, something in the nature of a trade's union, which as in other businesses, the London wholesale seedsman have established among themselves. One of the chief functions of the association is, as your Committee are informed, the regulation of prices and the determination, by mutual consultation and advice, what kinds of seeds should have their average lowered, and to what extent it should be done.

Accordingly the practice has taken root so firmly, and ramified in so many directions, that it now penetrates every branch of the business. Of its extent no stronger evidence can be given than the regular quotation in certain of the seed trade lists of the prices of "nett seed," and "trio," or "000,"—"nett seed" meaning good seed which has not been adulterated or mixed,—"trio," or "000," meaning seed whose vitality has been killed for the purpose of mixing with good seed.

It must not be supposed, however, that there are no exceptions to the universality of the practice; the results of your Committee's inquiries, confirmed, as they have been, by the trials recorded in last report, enable them to speak to the contrary. From these, were it their cue to do so, they could name the few houses which proceed on a different system, and which are struggling single-handed against the overwhelming preponderance of those who do not. But to do so would be by implication to reflect on others; and as the object of the Council in this inquiry is entirely of an impersonal nature—to redress a public grievance, and not to attack individuals,—they feel bound to refrain from mentioning names on either side, even when the mention would be laudatory.

Of the complication and difficulty of doing away with the system, an idea may be formed from some of the following facts. Instead of purchasing these seeds from growers in the market, wholesale seedsman find it necessary to enter into a sort of quasi-partnership, or joint adventure, with the growers. They supply them with the seeds they want grown, and receive the product from them after harvest at certain previously fixed, or proportionally arranged prices. In no other way (of growing by a third party) could they make sure that the seeds they purchase were of the kind they wanted, the seeds of many

different species, and especially of varieties, being undistinguishable. Unless they knew that the produce of any particular field was to be their own, they would neither have the right nor the interest to examine it while growing, to make sure of its kind. As may be supposed, the bargains with these growers vary infinitely; sometimes the seedsman is the owner of the soil, and the grower his tenant; and lease or bargains for growing seeds, extending over many years, have been entered into on the faith of the continuance of the present system of conducting the seed business.

Again, one apology for the present system is, that under it the seedsman keeps the price much more equable from year to year than it would otherwise be. He charges always more nearly the same price, trusting to the average of years and prices equalising things in the course of a number of years. Your Committee do not think that this uniformity of price is any advantage to the purchasers, not a great disadvantage, if obtained, as it is, at the cost of variation in the quality of the seeds. But the fact being that, whether an advantage or not, the seedsman have been to a certain extent acting upon it, it is plain that injury might be inflicted upon them if the system were suddenly put a stop to. If, for example, a seedsman is now in the midst of a course of years, of which the first half, which is past, has been bad, a sudden change would deprive him of the chance of restoring things during the remainder of his cycle of years, which, as the first half had been disadvantageous, he might reasonably expect to be good.

At the same time matters cannot be allowed to remain as they are; and your Committee's first idea was, that the seedsman themselves should undertake their own deliverance. They believe that these gentlemen are themselves thoroughly in earnest in their desire to get rid of the present system; nay, more, they believe that the more respectable members of the trade take no advantage from it, that their profits are not greater than those of other similar branches of industry, and that pecuniarily they would be gainers by the abolition of the system, and the substitution of a higher price for a better quality of seeds. But it is to be feared that they are so hedged in by the engagements and bargains that they have made, that it is very doubtful if they would be able to shake themselves free from its trammels by any efforts of their own. And even although they could, and were, by a unanimous resolution of the trade, to renounce all mixing of seeds thenceforward, the public would not benefit; on the contrary, they would be losers—for, instead of having the system conducted, as at present, by men of respectability, who, at least, aimed at providing a constant supply, the public would find their places supplied by a lower and more unscrupulous class, who would have no object but fleecing the public as rapidly and filling their own pockets as fall they could. Any effort for good must, therefore, not be limited to the voluntary abstinence of individuals, but must be compulsory and of universal application.

It may be said that if, notwithstanding the unfavourable appearances arising from their erroneous system, the seedsman do really conduct their business so fairly and honestly and with such attention to the welfare of the public, why should any change be made at all? Why not allow matters to remain as they are? If all did so, and all would continue to do so, and no farther lowering of the averages would be practised by the retail seedsman and small dealers, the public might be content to allow matters to remain as they are; but it is patent and notorious to all that the reverse of all this is the case. Not even all the wholesale seedsman are content with the lowness of average fixed by their own association (see the results of the trials in last report); and the average of the stock of the small country dealers who have been supplied with seed filtered through two or three retail hands must be correspondingly bad. But, more than this, your Committee learn from a reliable source that some of the growers themselves have begun to lower the average before it leaves their hands. It can scarcely be denied that this is a fraud suggested by the example of the seedsman themselves. The practices they have taught them they execute; and it shall go hard but they will better the instruction. The half-educated husbandmen will be slow to appreciate the difference between an admixture of lifeless seed by themselves and one by their employer, or to believe that what is fraud on their part is only legitimate precaution on that of the others. Nor until the seedsman distinctly warns his customers that he is not selling "nett seed," will the public generally admit the distinction.

Your Committee are of opinion, therefore, that something more than good resolutions on the part of the trade are absolutely essential; what that should be is the difficulty. Various suggestions have been made to your Committee; but they have found no one plan adequate to meet the evil. An application to the Board of Trade for the appointment of a Government inspector has been suggested by some; either trials of seed at the request of dealers themselves, or unknown to them, and the publication of the results has been recommended by others; and the passing of an Act of Parliament to render it penal to adulterate or to mix killed seed with good seed, is the specific of a considerable number of men whose opinion is entitled to respect; but your Committee have been unable to see that any one of these steps would of itself be sufficient to meet the end. Probably a combination, or rather a selection, of them might, especially if supported by genuine and sincere exertions on the part of the trade itself. For actual adulteration (as of Clover seed) an Act seems indispensable; no one will object to this; but your Committee think it should also extend to

the use of killed seed for mixing. No Act, indeed, that could be expected to pass would directly reach the use of old naturally dead seed for this purpose, but it might indirectly; for if the use of killed were prevented, the actual supply of old dead seed would not be sufficient to do much harm; and even if it were used, its appearance would betray its presence, and put the purchaser on his guard.

There are other points which can only be reached by introducing more generally a system of actual trials previous to purchases; and to this your Committee think every effort should be directed. In some districts it appears that farmers and growers are now getting into the way of taking their half-dried grass seed to the kiln to be dried. Whether it gets a roasting or a gentle heating merely sufficient for the purpose is, as business is now conducted, a matter of no great importance either to the kiln owner or his customer. It may be sold as good seed, or, if found out, will at least, do for "trio." But if "trio" were abolished, and trials were general, the farmer would soon find his roasted seed left on his hands; if this happened once or twice, the process would either be made safe or abandoned.

It is not easy to understand how any one who has to use considerable quantities of seed should ever dispense with this precaution. It may be that they suppose that the trouble of testing is greater than it really is, or that experience has shown the experiment to be useless, as, from the general adoption of the same average, no better quality is to be had in one shop than another. If the latter be the cause of the neglect of this self-evident precaution, it must soon cease to be a reason; for, as soon as the public know that the quality of the seed sold has hitherto been matter of regulation, they will evince a preference for those tradesmen who do not adopt that practice—and, of course, the demand for such will produce its natural consequence,—a supply. It will then become essential for the public to know whether those who profess to have abandoned the old system have really done so or not; and the only effectual way of ascertaining this is to test their seeds.

Your Committee have under their consideration the various modes of testing seeds which are known to them; and that which they feel inclined to recommend as on the whole the easiest, cleanliest, least troublesome, and most likely to be acceptable to the general public, is the placing of the seeds between folds of moist flannel and keeping them in the temperature of a sitting-room or kitchen for a few days. This, of course, is not equal to Nature's own test—actual growth in the earth. It may not answer for all seeds; but it answers perfectly for most kinds; and any seed that gives a good return under it may be depended on as certain not to give a worse result when actually sown. An idea of its efficiency may be gathered from a trial of it made by one of your Committee upon 100 seeds of one of the sorts whose average of good seed had in previous trials been found to be 75. The simple method recommended gave 25 seeds germinating on the third day, 23 on the fourth, 16 on the fifth, 9 on the sixth, and 3 on the seventh—total 76; but whatever plan the Council think most suitable for general use, your Committee recommend that that plan should be made as widely known and its practice be as strongly inculcated as possible.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE December meeting of this Society was held at Burlington House, the President, Mr. W. H. Bates, being in the chair. Amongst the donations to the Society's library received since the last meeting were the publications of various continental and American Societies, including the first number of a new American periodical, "The American Entomologist," the current number of the American "Bee-Journal," and a work just published at Madras by Lieut.-Col. Taylor, on the history of the White Borer, a species of Longicorn Beetle, with an account of the extensive attempts which have been made to arrest its ravages.

The deaths of Professor Bohemann, a distinguished Swedish entomologist (one of the honorary members of the Society), and of Mr. W. E. Shieckard, the author of a work on the British Sand Wasps and other Hymenoptera, were announced.

Mr. F. Bond exhibited a curious variety of the White Admiral Butterfly, *Limenitis sibylla*, also a female specimen of the Adonis blue Butterfly having several streaks of the blue colours of the male on the upper side of one of the fore wings; also a hermaphrodite specimen of the *Lasiocampa Querens*.

Mr. Ladd Saunders exhibited a specimen of a new British Moth, *Crambus Myellus*, allied to the common *C. Pinetellus*, taken by Mr. D. E. Brown near Aberdeen; and Dr. Dutton, a splendid specimen of *Catoxela Fraxilli*, taken at Eastbourne on the 20th of August last.

The Secretary announced that the Milan Academy had offered a prize for the best essay on the means of taking honey from hives without injuring the bees. Of course the plans would necessarily have reference to the usual form of hives adopted in North Italy, and not to special bee structures.

Professor Westwood exhibited drawings and read descriptions of various new and curious exotic species of Hymenopterous insects; and the Secretary read a paper by Mr. W. F. Kirby, "On the Application of the Law of Priority to the Nomenclature of the Genera of Diurnal Lepidoptera." In this memoir the author showed that this law, universally adopted for the names of species, would, if followed out in generic nomenclature, produce a complete revolution in the names of the groups of Butterflies; one chief cause of the difficulty arising from

the want of a fixed principle in the selection of a typical species for which the generic name should be retained when the genus requires, by the addition of new species, to be broken up into other generic groups. In such cases, the writer seemed to be of opinion that the species placed by the original founder of the genus at its head should be retained as its type, and should consequently hold the old generic name; but most of the members present appeared to consider that where no especial species was named as the type by the original describer of a genus, a subsequent investigator of the group was at liberty to select any of the species which he considered as most fitly illustrating it, and retain for it the old generic name. The principle is applicable to every branch of natural history, and requires to be authoritatively settled.

OUT-OF-DOOR GRAPES.

THIS subject, I am glad to see, is attracting a little attention now that it has been introduced. The cultivation of the Vine, with the object of ripening Grapes in the open air, is a subject worthy of much more consideration than is generally bestowed upon it. It is a particularly interesting occupation, very pleasant in itself, and within the reach of everyone with a rod of ground and living in the humblest dwelling. The past season having been so warm and dry, and so particularly well suited for the ripening of Grapes in the open air, we are very naturally (having found the fruit more palatable than usual), inclined to bestow rather more attention on the matter than we might have done at the close of a less favourable season. We can scarcely ever expect to endure another year so tropical in its character as that now closed, or a season in which Grapes in the open air could have been cultivated with so much advantage in this country as 1868.

I am very pleased indeed to hear that Mr. Watson (see page 459), is such a successful cultivator of the Vine in the open air. I hope he will, as you have asked him, give your readers the benefit of his long and great experience; it would be an interesting and at the same time extremely useful and excellent guide to others. Mr. Watson slightly misunderstands my meaning (see page 416), of "by a little ordinary attention a tolerably decent lot of Grapes may be grown." What I meant was, the ordinary attention bestowed on Vines under glass. If such, I maintain, were bestowed on out-of-door Vines, a tolerably decent lot of Grapes would be grown, but not equal to those under glass. It is astonishing how good the out-of-door Grapes are sometimes, where attention is bestowed on their cultivation.

It is not, I think, so much to a want of knowledge as to neglect that we are to ascribe the miserable appearance that out-of-door Grapes present in most gardens. The professional gardener does not consider them worth his trouble, and amateurs in most cases take their cue from the professional men. In country districts this is especially the case. There is nothing so convincing as example; therefore, if our great men, who know how a Vine ought to be treated, would but show a few out-of-door Vines correctly managed and laden with their fruit, there would soon be plenty of imitators, and Grapes, the noblest of all our fruits, would not be so very rarely to be met with at the tables of the labouring classes as they are at present. It is they—not the rich who can afford glass structures—whom I wish most to see cultivating their own Grapes on the walls of their cottages.

There is no plant more easy of cultivation than the Vine; none more simple or easily managed, whether it be under glass or in the open air. There is no extraordinary attention required. It must not, however, suffer neglect, as nine-tenths of the out-of-door Vines do.

To succeed in the cultivation of the Vine out of doors, I should recommend, in the first place, if there be a choice, to plant in the warmest situation, on a south or south-west aspect. Take out the existing soil to a depth of 3 feet, and to a width of, say 6 feet, to begin with, which width can be afterwards increased; put in about 18 inches of broken bricks or rubble for drainage, then about 2 feet of the following, well but roughly mixed—viz., two-thirds fresh yellow loam, and one-third lime or brick rubbish, with a sprinkling of manure and charcoal, or burnt ashes; in fact, in just the same way as the best Vine borders are made. Plant young Vines early in the spring 30 inches apart, cut them down to within 6 inches of the ground, and train up one shoot only for the first season, which encourage to the very utmost. Guard against May frosts, which frequently destroy the young shoots; do not pull off a single leaf or stop a single lateral, excepting where they may be getting crowded, until the month of September; the grow-

ing tips of the shoots should then be pinched out, and the main stem exposed to the full action of the sun, so as to have the wood thoroughly ripened.

Prune before Christmas. If well ripened, and about the thickness of one's finger, 3 feet of a rod may be left, and less or more in proportion. Encourage the main stem as before, and train the side shoots (on which may be expected a few bunches) slightly upwards about 9 inches apart, stopping the growing point one or two eyes beyond the bunch until that is fairly set. Then allow the laterals to increase a little, stopping them as every two leaves are produced, without allowing them to become crowded, or one leaf to shade the other. In September check all growth, and expose the wood thoroughly as before.

Continue the same treatment from year to year.

If one Vine is required to cover a larger space, encourage some side shoots to grow in the same manner as the main shoot, which should after the first pruning be laid down in a horizontal position along the bottom of the wall, and upright bearing stems trained up therefrom, at a distance of about 28 inches the one from the other. The main shoot can be continued to any length, the upright rods taking the place of individual Vines, being pruned and spurred in the same manner.

A very good plan with out-of-door Vines is to renew the rods, cutting down each alternate rod every second or third year, according to their length. A Vine also makes a very handsome plant on a very high wall, or on the end of a house, if trained as we do our horizontal Pear trees—that is, one main stem with horizontal rods 18 inches or 3 feet apart, on which the bearing shoots are produced on the upper side only. If 18 inches apart, the shoots may be left at 9 inches the one from the other, and pruned home every season; if 3 feet, then they should be 18 inches distant, and renewed every second or third year alternately.

In winter pruning I would say, Prune always to a good firm eye, study this principally. Do not prune too closely for the sake of appearance. In summer keep the shoots thin, and every leaf fully exposed to the sun's influences, so as to have the wood thoroughly ripened. Then, if mildew does not attack them, four seasons out of five wonderfully good Grapes will be secured.

For the prevention of mildew, in answer to "D. of H.," I recommend the practice of painting the rods, after pruning, with a mixture of sulphur, soft soap, &c. This, however, although it may serve to cleanse the shoots operated upon from any existing insects, does not in the least prevent the recurrence of mildew during the growing season. The only way to prevent this is by the application of sulphur. Flowers of sulphur should be dusted freely all over the leaves, fruit, &c., immediately on the appearance of the evil, or indeed previously. This should be done during bright sunshine in the early part of the day, and repeated frequently if the malady continues. If the weather is too wet to allow of this being done effectually, syringe with sulphur water, or clear dissolved Gishurst compound, which must, however, be washed off the berries, if they are nearly ripe, to prevent imparting its nasty taste. Sulphur in itself has no taste, and will cause no injury to the eater of it, although it may somewhat disfigure the appearance of the Grapes.

To grow Vines successfully in the open air, nothing is required but perseverance and attention.—ARCHAMBAUD.

GARDENING IN THE WEST.—No. 3.

We have seen that in America, our first care is to take measures to retain as much as we can of atmospheric moisture, just as in England we are chiefly at pains to accumulate and retain solar heat. We may next talk over some applications in everyday practice of this principle of difference.

Dryness of the air is in some respects agreeable to the human constitution, at least to ours, *as* "whites." It is bracing, stimulating, exciting. It has much to do, no doubt, in producing the noticeable lankness and angularity of the "Yankee," his activity and acuteness of mind as well as body, and possibly with an earlier wearing out or decline of his powers, when life's fever is allowed to run on unmoderated. The inhabitants of the deserts of Arabia, and of Northern Africa, where an arid condition of the air is constant, and sometimes mortally intense, are described as among the most active, and quick-nerved of all mankind; long-lived, and unusually exempt from disease; but the Arab's life is spent wholly in the open free air. The

American is under a disadvantage from the necessity of close shelter from the severities of winter, concerning which, and their palliations and compensations, I shall have something to say.

Other races seem to endure, and even to enjoy and prefer, air that is too heavy with vapour, or carbonic acid, or both, for the Caucasian. Geologists tell us that not very long ago, geologically speaking, the entire atmosphere of the earth was as vapour-loaded as that of the southern shores of the Caribbean Sea, or of the Gulf of Guinea is now. I do not know whether they deduce from this a point of evidence to show that the races now fading and disappearing before the advance of the new "lords of the earth," may have tenanted it before its atmosphere became snitable for the introduction and existence of the progeny of Adam and his ruminant companions; but it seems not an unplausible supposition, especially as so many traces of the "pre-historic man" are turning up, and as reference to his existence is found even in the written record (Gen. iv., 14.; vi., 2). Negroes, in the States, seem most at home in the low, rich, malaria-breeding lands of parts of the south; or, if in the north, in warm steamy kitchens, stables, or breweries; but I have never seen any of them in charge of moist hot plant stoves, nor do they show any taste for the arrangements of colour and outline that the artist gardener combines so delightfully. There seems to be little desire or necessity, however, for the culture of tropical plants in America. The hardier winter garden plants, common out of doors all over England, are rarities there, more charming, more manageable, and more liked.

The American gardener is peculiarly exposed to alternations of extremes. There is a wide difference between the vapour-bath of his plant houses, and the doubly-dried air of dwelling-rooms; for, in the winter, strong fires must be kept up in furnaces beneath the rooms, or in stoves within them, there being ordinarily a difference of 50°, and often of 80°, between the +20° to -20° out of doors, and the necessary 65° or 70° within. Habit renders people careless about taking pains to keep up an evaporation from water pans over these often red-hot heaters. A friend, lately from England, whose office was heated by a stream of air entering it through a furnace and register, and passing out through a ventilator, and who was not yet accustomed to such sirocco-like air, used to sprinkle water frequently all about the floor to allay uneasy sensations in his bronchial tubes, finding a single pan of water possessed of too little surface to moisten the rapidly changing air. Sitting-room stoves are often surmounted with a basin or vase on the top, to contain water, and some keep a bit of resin floating on the water, but all this is oftener neglected than used. Kitchen stoves have generally boilers on them containing water, and it is common to hear persons, who do not suspect the cause of their easier sensations, declare that they prefer sitting in the kitchen. The emigrant gardener will do well to watch the symptoms and effects of these new conditions upon his own constitution as well as upon those of his plants. There certainly seems to be less tendency to consumption than in England, perhaps because board floors and carpets are more common under the too thin shoes worn by women, and because there is less exposure to the sharp currents of air which are required by the draught of the capacious flues common in England, although the closeness of the stove-rooms is certainly the other extreme.

Of course, these excessively dry dwelling-rooms are unfavourable to the growth of plants, and no ordinary sorts can live through a winter in them without special protection. Yet plants are wanted, not alone for companionship and beauty, and for contrast with the universal white of the shroud that wraps all out-of-doors, but for solace, memory, and hope too; memory of the green and the glow of the summer and autumn past, and hope of the buds and blades of a wonderful resurrection in the spring to come. They are wanted, too, for physical health and comfort's sake. It is often said very truly, that "the cook is better than the doctor," and the gardener may claim some such merit. It is for him to teach how to keep these floral companions healthy and bright according to their respective natures, from which it is but a few steps to a better conception of the hygienic laws that govern the health of the human occupants of the rooms.—PENNSYLVANIA.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As before stated, all spare ground should now be dug and ridged—indeed, trenched if time permit. Where a systematic rotation of crops is carried out, and, of course, a regular system

of spade management pursued, it is an excellent plan to trench all the kitchen garden successively in the course of every three years. The trenching to be performed each year, should be on the ground intended for tap-rooted plants, such as Carrots and Parsnips, also on that for new plantations of Strawberries, Raspberries, and bush fruit; if the subsoil is stiff and sour it should be well worked up, and, if wet, of course well drained. A good coat of cinder ashes worked into it would serve to facilitate the passage of water and air. Every advantage must be taken of mild weather to give a little attention to growing crops, such as *Lettuces*, *Cabbages*, and *Cauliflowers*. Surface-stirring, whenever practicable, must be persevered in, and dressings of lime and ashes may be given to check damp and the ravages of snails. Some of the strongest roots of early *Rhubarb* might be protected with pots or boxes, and sufficient leaves and stable litter to produce a gentle warmth. This would save injuring the roots by removing them for forcing; but where there is a good stock of roots this is of little importance, and is hardly worth the trouble and litter which it causes. Prepare ground, by heavy manuring and trenching, for fresh plantations of *Rhubarb*, *Sea-kale*, and *Asparagus*, and remember that the ground for these can hardly be made too rich.

FRUIT GARDEN.

Persevere while the weather is mild with all necessary operations on wall-fruit trees, such as pruning, nailing, and dressing. Continue the renovation of old borders as opportunity offers. See that pyramid and bush Pears and Apples have the necessary pruning, and dress orchard trees with quicklime to destroy moss. The most effectual cure for this, however, is thorough drainage.

FLOWER GARDEN.

The winter having as yet been unusually mild, every chance has been afforded of not only bringing up arrears of autumn business, but of even stealing a march on the coming spring. In the flower garden, little can be done now except digging deeply the beds for flowers, in order to ameliorate the soil; any that are exhausted should have the soil renewed. In open weather laying turf or other pleasure-ground alterations may be proceeded with. See that all half-hardy plants are secured against severe weather. Pink and Pansy beds must be well looked after, and those plants that are loosened in any way should be carefully fastened; the same observations will apply to seedling Auriculas, Polyanthus, Carnations, and Picotees. Some, it is said, are spindling this mild weather. It will be better to allow the stem to remain on till rather later in the spring. Water occasionally when the soil is very dry, but avoid as much as possible wetting the foliage. Those who have not obtained the necessary number of Ranunculuses to make up their beds ought to do so without delay, as the period for planting will soon be here. If the beds have not been already formed, perhaps the simplest and best way is to excavate the soil 2 feet deep, put in 6 inches of decayed cow dung, and cover this with maiden turfy loam to the depth of 12 inches; the remaining 6 inches to be equal parts of loam, leaf soil, and sand thoroughly incorporated. Should frost set in, cover Auricula frames with two good mats, giving air by tilting the lights whenever possible. Should the plants by any means become frozen, allow them to thaw gradually without being exposed to the sun's rays.

GREENHOUSE AND CONSERVATORY.

About 40° is a good temperature for the conservatory when not attached to sitting-rooms, and only used for wintering large specimens, without plants in blossom; but where a supply of stove plants in bloom is constantly kept up from a forcing pit, which is essential in every large establishment in winter, the best heat is 45°. Cinerarias, which are great ornaments in winter, are thirsty plants, and should be well attended to with water; they are also liable to the attacks of insects, and must be well looked after. Chinese Primroses are likewise very ornamental, and ought to be cultivated in quantity. In regard to soil, two parts rough leaf mould and one of well-decayed cow dung, with a little sand, will suit them best, and in this they like plenty of moisture. As this house will now be the chief resort of the family, the floors, &c., must at all times be kept particularly clean and dry. Dryness of the atmosphere through fire heat, however, will not keep the plants in that luxuriant health which not only creates a present interest in them, but also furnishes a guarantee for success in future. Great moderation, therefore, in the use of fire heat is necessary in this department. Camellias in bloom, if any, may be watered now and then with clear tepid manure water. Let Pelargoni-

ums now be kept at rest as much as possible, giving them but little water—in fact none unless the leaves show a disposition to flag. In fine weather like the present they should have plenty of air, but not admitted in cold currents, which are apt to prove injurious to the leaves. Large plants of *Rhododendrons* and *Camellias* that have been some time in their pots or tubs, will require more attention than people commonly imagine. Weak tepid liquid manure may be given them occasionally with advantage. In addition to keeping the conservatory gay with plants in flower, let the arrangement of the house be occasionally changed by grouping the plants somewhat differently, and adding a few remarkable for effect. As, with the exception of forced plants, most others are now in an inactive state, the temperature of plant houses should fall to the minimum point consistent with the safety of their various inmates; nothing can well be worse for the development of a healthy vigorous habit in plants than subjecting them to a high temperature at the present dull season.

STOVE.

In the case of stove plants, keep up an abundance of atmospheric humidity to counteract the drying tendency of hot-water pipes. In order to obviate the inconvenience of drip, leave a little back air on all night whenever the weather is at all favourable. A few early *Gloxinias* and *Achimenes* may now be gently forced for the decoration of the conservatory. All stove plants should now, and for the next six weeks, be quite at rest, and in that state 55° will be high enough for them in cold weather. No more water should be given at the roots than will keep the leaves from flagging, but the atmosphere should be more or less moist.

FORCING PIT.

It should have at this period a permanent bottom heat of 80°. Atmospheric moisture, let us assume, being also secured, preparations must be made for obtaining a due succession of early spring flowers. If not already done, introduce a few favourite plants adapted for forcing, such as Moss, Provence, and Crim-son Perpetual Roses, hardy Azaleas, and similar plants. Hybrid Perpetual Roses will do better in a more moderate temperature.—W. KEANE.

DOINGS OF THE LAST WEEK.

Our work has been just the same as that recorded in previous weeks' notices, and to a great extent regulated by the weather. On Thursday night and Friday morning we had a sharp frost, which would have been of more use to us but for the holiday time. There is nothing lost through a holiday, and it ought ever to be prized in proportion to its certainty of occurrence, as then men can make their arrangements beforehand. To the young, especially, the looking forward to a day that they can do as they like in, and given to them for that purpose by their employers, does wonders in prompting to activity and industry. When Christmas-day, New Year's-day, or any other day is thus given, men should be very careful not to exceed the limits of the time arranged upon, as, if that is done often, it is apt to sour the kindest hearted employers. When we have sympathy between the employer and the employed, we ought to have generosity on the one hand and faithfulness on the other.

We put a sprinkling of litter, laurel boughs, and similar materials over many plants on Thursday evening and Friday morning, as the wind, barometer, and thermometer seemed to indicate something of the cold weather that has been experienced in the north. Visions even of malleting good fresh ice passed over our heads, for after such a summer and the free use of ice, our reserves are lower than usual; but at midday the wind changed to the warm south, and a rapidly falling barometer seemed to tell us that the rains were not yet over.

KITCHEN GARDEN.

The chief work was looking after crops in heat, as *Rhubarb*, *Sea-kale*, &c., sweeping the beds of Mushrooms, which we frequently do when we use a covering of hay over the bed, as otherwise the spawn would sometimes be tempted to run over the surface of the bed instead of at once throwing up Mushrooms. There is less of this tendency when there is no covering on the beds, and when a house is well heated this is often the best plan. We find, however, that a little covering does much to equalise the temperature and keep a moist atmosphere over the bed. In the case of *Cauliflowers*, *Lettuces*, *Endive*, *Radishes*, and other crops under protection, care was taken to prevent damping by plenty of air. Successions of Dwarf Kidney Beans were potted, chiefly that they might be easily

moved afterwards. Potted young Cucumber plants, and sowed more seed.

FRUIT GARDEN.

Cleaned out a vinery, washed the glass and woodwork, whitewashed the walls, shelves, &c., in order that we might fill it for the time chiefly with bedding stuff from cold frames and pits. Put more Strawberry pots in frames, as detailed lately, and moved the first of those placed in a frame to a pit where they could have the benefit of a hot-water pipe. These were placed on shelves supported on pots, so as to form a temporary stage of the same slope as the sashes, the pots being about 15 inches from the glass. We have merely sprinkled a little fresh moss on the boards for the pots to stand upon, which retains a little moisture at the bottoms, but prevents that accumulation which often takes place when saucers are used. These pots are set too thickly for remaining; but as the plants need more room they can be carefully moved with the roots protruding in the moss, taking moss and all. In using such moss, especially when fresh gathered, and after such a mild season as this, experience makes us careful to avoid the presence of small slugs and snails, which would soon grow larger in the heat, and be difficult to exterminate. To ensure their absence we put the moss in a barrel, sprinkle each layer with quicklime, and then fill up with hot water. Allow this to stand covered up for a night, and it will be rare if one of the slimy family escape. Pruning, &c., as before.

ORNAMENTAL DEPARTMENT.

Proceeded with out-door work, as levelling, turfing, digging, and ridging, at favourable opportunities. Pruned the hardier Roses, and even did the same as respects the more tender ones against a wall, as the wall was becoming shabby, and we wished to hide deficiencies by a good scrubbing and limewashing. This is good in itself, and a suitable preparation for anti-corrosion paint of whatever colour. We have not at this season done the work as we would have done it in March or April; but the following makes an excellent *durable whitewash*:—Make the quicklime pass through water in a sieve, as if you were going to make lime putty, or the last smooth coat in plastering a room, and when tolerably well settled add about one-third of cement to the limewash, and then water to thin it sufficiently. For a light wash use Portland cement, for a darker wash use the dark Roman cement. This generally stands the weather well, and if laid on bricks that are new, or well cleaned, you can hardly colour your hand in drawing it over the wall after the colouring has become dry.

Old walls are apt to become unsightly from nail holes, and these help on the decay of the wall. Whitewash, or any colour that may be approved of, hides most of these drawbacks, and is a security against insects. Had we a new wall we would never allow a nail hole in it. We would have a wire trellis, or studs, with a hole in each, or even metal nails driven in securely at regular distances, and left as permanent holders, and shoots could be tied to them. Such nails, heated well in an old shovel or pan, and then placed in oil and allowed to dry before being used, will last for years before they begin to rust and decay.

Painting and not Painting.—"G." tells us, that he had frame sashes new a few years ago, they looked well, and have always been kept well painted, but they are becoming so rotten that they can scarcely be moved. There is not a doubt that the sashes had been made of green wood. The painting kept moisture out, but it likewise kept the moisture in, and as that could not have an outlet, it fermented and produced a dry rot. We some time ago were asked to look at some slats of oak gates, not made above half a dozen years, that were as rotten as touchwood. The owner would have them painted, though the oak was green. The tradesman was not at all to blame. Such gates ought to have stood at least a twelvemonth before being painted. We are sure they would have done good service, so far as wear was concerned, for from ten to twenty years if they had never been touched with a paint brush. Something would be gained were the impression general, that paint is a preservative only when used over dry, well-seasoned timber. When used over that which is fresh and green, however well the work may look, it just acts as a source of premature decay. With the prejudice in favour of paint as a preservative in all circumstances, we should be afraid to say how long we have known sashes in constant use last, and be as fresh as on the day they were made, although they never were painted at all. In wet weather, however, they were very heavy to move. We have known not a few barns that had their sides made of green feather-edged boards, which would have lasted

many years if let alone, or if painted or tarred a twelvemonth or eighteen months after being fastened in their places, but they very soon became rotten, because tarred or painted as soon as they were put up. Paint dry well-seasoned wood, and you preserve it; paint green unseasoned timber, and you take the most effectual means to cause it to decay prematurely.

On the signs of frost we will protect the more tender *Roses* against a wall with evergreen boughs placed in front of them, and a little litter over the collar of the roots. In such positions the most tender *Teas* seldom require more attention. In cold places, in beds, the plant that gives least trouble is to take the plants up in November carefully, pack the roots in soil in a shed, and plant out again in the middle of March. A little fern or long litter over them where they stand, if on their own roots, will often enable them to throw up fine flowering shoots, though what is fully exposed may be much injured. Against a frame such *Roses* will in general be safe with only a little protection in the most severe weather, as the wood is in general harder. From a wall we have thus had *Roses* almost as early as if the plants had been in a cold house under glass.

One of the structures, however, which we should like to have would be a wood and glass house, with beds for *Tea-scented Roses*, and the tender kinds. We should be satisfied with one of the roughest description, with a fixed roof of large squares, and ventilation at the top, and at the bottom in front, depending on hand appliances for watering and syringing, and a close still atmosphere for keeping the frost from doing injury. The exclusion of high winds and rains would secure fine blossoms, well formed, and without flaws; but if we could realise many a day dream, it would be to have the roof, whether lean-to or span, moveable in narrow sashes, each pivot-hung at the centre of the ends, and then these sashes, standing nearly vertically in summer, would admit rains when these were desirable. To render the whole complete, we would have 4-inch hot-water pipes under each bed and a pipe round the house, to give a mild dry heat when necessary, and the bottom and top heat independent of each other. The whole cost would be a mere bagatelle to many of our enthusiastic *Rose* cultivators, and the pleasure derived would be more than a tenfold reward. As stated above, however, even a simple unbeated structure would yield a great amount of pleasure.

Bedding Plants.—Where there are no means but cold pits and frames, the late weather has been very trying, and though ours have kept very well, the greatest care would not prevent a few damped leaves, and therefore we felt anxious to remove the most tender to a vinery or other place, where they could have plenty of air and a little dry heat in such wet dripping weather. As frequently stated, it takes a large amount of damp to injure *Calceolarias*, but it is different with *Pelargoniums*, *Verbenas*, &c. They stand well in cold pits protected, when there are sunny days in which you can give abundance of air, and care is taken not to use a drop of water except when absolutely necessary. In such moist weather as we have had lately, and however much air might be given by tilting the sashes, there would be a tendency in many leaves to show signs of damping, and if not removed at once the damping would soon spread. The greatest evil is that in such weather the time must be chosen with care for removing the affected leaves, as the falling of a slight shower over the plants would be sure before long to increase the evil. In such a season, when the sashes can so seldom be taken completely off for fear of rain, the plants, just like our *Calceolarias*, grow too freely, and therefore become more tender and full of juices than we like them to be, and consequently will be more liable to suffer from frost, or from being covered up long, than plants more freely exposed to a colder but drier atmosphere.

On these accounts, all combined, but chiefly because it is of importance to the welfare of plants to be able to clean them and attend to them in all weathers, we earnestly advise those who contemplate having a cold pit, to make it just so large that they can walk inside of it, clean plants and pots, top-dress, stir the surface, and change the positions of plants even in the most unpleasant days. Two feet more in width will give room for a narrow pathway, and both wood and glass are now cheap, and that room may be compensated for by the plants standing more closely, or even beneath the stage and platform, or if the path is sunk, on a broad shelf over it. There is no comparison of the enjoyment to be realised from such a place, when contrasted with a mere cold pit. A small stove would render all covering-up, except in the coldest weather, unnecessary. Many a little house might thus be attached to a sitting-room and kept all comfortable by means of a coke or gas stove,

with merely a pipe-outlet into the open air. It is well to commence with a frame or cold pit, but the little house is the great object to aim at.—R. F.

COVENT GARDEN MARKET.—JANUARY 6.

Business is very quiet here, and there is nothing to call for any particular notice.

FRUIT.

	s.	d.	s.	d.	s.	d.	s.	d.
Apples ½ sieve	1	6	to	2	0			
Apples doz.	0	0	0	0				
Cherries lb.	0	0	0	0				
Chestnuts bush.	10	0	13	0				
Currants ½ sieve	0	0	0	0				
Black doz.	0	0	0	0				
Figs doz.	0	0	0	0				
Floribunda lb.	0	9	1	0				
Cobs lb.	0	9	1	0				
Geeseberries quart	0	0	0	0				
Grapes, Hothouse lb.	8	0	6	0				
Lemons 100	4	0	8	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	6	0	Leeks bunch	0	4	to	6
Asparagus 100	10	0	0	0	Lettuce per score	2	0	4	0
Beans, Kidney per hd.	2	0	8	0	Mushrooms pottle	2	0	0	0
Beet, Red doz.	2	0	8	0	Mustard & Cress, punnet	0	2	6	3
Broccoli bundle	1	0	2	0	Onions per bushel	5	0	7	0
Brns. Sprouts ½ sieve	2	0	0	0	Parsley per sieve	8	0	4	0
Cabbage doz.	1	9	2	0	Parsnips doz.	0	9	1	0
Capicams 100	0	0	0	0	Peas per quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	4	6	6	0
Caullflower doz.	3	0	6	0	Kidney do.	4	0	7	0
Celery bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers each	0	9	1	6	Rhubarb bundle	0	0	0	0
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	8	0	0	Shallots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	8	0
Herbs bunch	0	8	0	0	Tomatoes per doz.	1	6	2	0
Horseradish .. bundle	8	0	5	0	Turnips bunch	0	6	0	0

TRADE CATALOGUES RECEIVED.

Richard Dean, 8, Denmark Villas, Ealing, London, W.—*Catalogue of Vegetable, Farm, and Flower Seeds.—The Useful Garden Almanack for 1869.*

James Carter & Co., 237, 238, and 261, High Holborn, London, W.C.—*Carter's Fide Mecum for 1869.* With numerous Engravings.

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

PALMS FOR A CONSERVATORY (A. B.).—Small plants of the following would suit you—viz., *Scaevola elegans*, *Chamaerops humilis*, *Fortunei*, and *palmetto*, *Phoenix dactylifera*, *Lantana berberica*, *Thrinax parviflora*, *Corypha australis*, *Rhapis flabelliformis*, *Jubaea spectabilis*, *Brahea dulcis*, and *Sabal Adansonii*. You will find some useful cultural notes in No. 383, page 115 of our last volume. You have not heat enough to ensure rapid growth. Apply to any of the leading nurserymen who advertise in our columns; if they have not the species in stock they can procure them for you.

REQUIRE FOR WINTER (S. P.).—We do not know what materials you have for furnishing heat, but if you have a closet near a fireplace you may have plenty of Rhubarb by placing roots in boxes, filling in between the roots with moist soil, and then placing the boxes in the closet. This is the simplest and cheapest mode of forcing Rhubarb for winter use. You may place chimney pots, old baskets, or boxes over the crowns of plants in the open ground, and put on hot stable manure somewhat higher than the tops of the pots or boxes, and for 18 inches or 2 feet all round, and then cover with loose long litter to keep off snow and rain.

CORONILLA GLAUCA LOSING ITS LEAVES (R. S. S.).—It is very common for this plant to lose most of its leaves after being taken into the greenhouse in autumn. We consider the cause to be the cooler and warmer atmosphere by which the plant is excited into growth, and the old leaves are consequently thrown off, as in the case of most evergreens when making new growth. The remedy is to house the plants sooner, and give them a light and airy situation. We think plants intended for blooming in winter ought not to be placed out of doors at any time, but be kept constantly under glass, affording them as much light and ventila-

tion as can possibly be given, and then the wood is thoroughly ripened, and the plants escape the evils resulting from a change from out of doors to in-doors—a change which is in most cases followed by a loss of foliage, and often by the flower buds falling, as with Camellias.

RHODODENDRONS NOT FLOWERING (Agnes).—Yours is a case of plants not flowering owing to their having been taken up whilst in "full beauty," and they are "beautiful the first year," but not continuously. We think you expect too much; every plant removed is to a certain extent deprived of roots, and is consequently enfeebled, time being necessary to restore the balance between the roots and foliage; besides, your plants are forced, and will need a year at least to recover from the loss consequent on their being excited into growth at an unnatural season. The plants should be kept in the greenhouse until their growth be complete, abundantly supplied with moisture, and plenty of air given. After frosts are past the pots should be plunged to the rims in coal ashes out of doors in an open situation, but sheltered from high winds and powerful sun. This will prevent the sides of the pots becoming heated, and the roots from being injured. The surface of the soil in the pots should be covered with about an inch thick of cow dung, plenty of water must be given in hot dry weather, and the plants may be syringed overhead every evening. If they are in small pots for the size of the heads, and the pots are full of roots, or the ball very closely matted, you may shift them into a larger size, but avoid large shifts, and see that perfect drainage is provided. The best time to repot is when the plants are shedding their flowers, and for plants not in pots, the best time to take them up and pot is in September. The soil, we think, will be suitable. Plants for forcing are best kept in a cold pit or frame in winter, affording an abundance of air whenever the weather is mild, with slight protection in severe weather, the roots being secured by plunging the pots to the rim in coal ashes.

ANASTATICA HIEROCHONTICA CULTURE (D. H. S.).—This, the Rose of Jericho or Resurrection plant, is a greenhouse annual, though it will succeed as a half-hardy one in the southern counties. The seed should be sown in March in a hotbed, affording a mild bottom heat of 70°, and a top heat of from 65° to 70°. The compost most suitable is two-thirds very sandy fibrous loam with one-third leaf mould or fibrous peat, and a free admixture of sharp sand; the soil must be sandy and open, and good drainage must be ensured. Fill the pots about three parts full of compost, and then to within half an inch of the rim with fine sandy soil, using the roughest at the bottom, and making the surface smooth. Scatter the seeds rather thickly over the surface, and cover them with a fine sandy soil to depth equal to the diameter of the seeds. Give a gentle watering, and place in the hotbed, keeping the soil moist but not very wet, and when the plants appear place them near the glass, and afford an abundance of air. When large enough to handle, the seedlings may be potted off singly in small pots, or two or three in a pot, and again returned to the hotbed until they recover from the potting, then remove them to a shelf in the greenhouse. Careful watering is necessary; no water should be given as long as the soil is moist. This plant should have a light and airy position, for it is a native of the dry wastes of Egypt, Palestine, Barbary, and Arabia. It is a dwarf bushy plant, about 6 inches in height, with whitish flowers, and when the seed is sown in March flowers are produced in July and August, and sometimes in June. It should be pulled up by the roots whilst in flower, or before it seeds and withers, and should be hung up by the roots in a dry room until dry. It may then be kept in a dry room for years, and when the root is placed in a glass of water the whole plant will expand, the buds of flowers swelling and appearing as if the plant had been but recently taken from the ground. When it has been long kept the whole plant must be immersed in water. We do not know where seed may be obtained.

WOODLICE IN CUCUMBER PIT (The Worm).—They like a dry retreat, and from that fact, as often stated, may be derived a lesson as to how to destroy them. If your bed is very much infested with it well, except a few inches in width at back and front, and cover that dry part with a little dry hay. Provide yourself with boiling water and a small-robed watering pot, and gently turn over the hay in the morning, and sprinkle the woodlice with the water as you proceed. If that is not practicable, take a number of the smallest pots, place a piece of boiled potato in the bottom, add a little dry hay or moss over it, lay the pots on their sides, and take the pieces out in the morning.

VINES FOR VINERY (Inquirer).—Your viney is in two divisions—no doubt one intended for an early, and the other for a late viney—and appears properly arranged, having the border partly inside and partly outside. Three rows of 4-inch hot-water pipes along the front and both ends will be sufficient for the early house, but we would have preferred four rows instead of three. Two rows of 4-inch piping will be sufficient for the late house. The boiler would be best at the back where the division between the two houses occurs, so that the hot water may soon pass into the house, and that with as little heating of piping outside the house as possible. The Vines we advise for the early house are three Black Hamburgs, one Duckland Sweetwater, and two Foster's White Seedling. If you wish for more black Grapes than white, substitute one Champion Hamburg for one of Foster's White Seedling. In the late house, where you appear to have six, we would have one Lady Downe's, one Muscat of Alexandria, one Calabrian Raisin, one Morocco, and two Mrs. Pince's Black Muscat. We do not approve of your having Vines on the back wall, but they will for a time do tolerably well. You may have West's St. Peter's in the late, but not in the early house. Black Hamburg would be more suitable.

DWARF PEAS AND BEANS (Amateur).—We think it is a great mistake to grow none but the kinds that do not require sticking. Tom Thumb or Beck's Gem Pea is the best for the first crop, and it may be succeeded by Little Gem (Maclean), and Bishop's Long-podded, which are the only kinds that in our experience are worth the trouble and the ground they occupy. We trust some ready means of giving support to Peas will shortly be invented, and then we shall hear no more of the very dwarf kinds of Peas, which are at best poor croppers. Beck's Dwarf Green Gem, and the Royal Dwarf Fan or Cluster, are both good dwarf sorts of Beans. One quart of Peas will sow a row or drill 40 yards long, so that for 10 yards half a pint will be required. Of Broad Beans a pint will sow a row of from 8 to 10 yards. The distance between the rows should be equal to the height of the Peas; and the seeds should be covered with from 1½ to 2 inches of fine soil. Allow 1 foot 3 inches between the rows of Beans.—G. A.

SELECTION OF VINES (H. Booth).—For your early house we would

choose one Dutch Sweetwater, one Buckland Sweetwater, one Royal Muscadine, one White Frontignan, one Golden Champion, one Muscat Hamburg, two Trentham Black, and four Black Hamburgs. For the late house—two Muscat of Alexandria, two Bowood Muscat, one Gros Guillaume, two Lady Downe's, two Trebbiano, one West's St. Peter's, one Morocco, and one Mrs. Pince's Black Muscat.

MUSCAT OF ALEXANDRIA VINE IN A POT (Novice).—We would plant the vine in the inside border at once, taking the ball out of the pot, breaking the ball carefully so as to disentangle the roots, and spread them out carefully 8 inches or so from the surface. We would supply with water at 120°, mulch the surface to keep the heat in, cut back the rod to within 2 or 3 feet of the ground, and as soon as the buds swell remove them all except the two nearest the point. As these push, shorten one and allow the other to grow. By allowing your strong cane, with fine buds near the point, to remain at nearly its present length, you might have some bunches next season, but most likely these would tell on the vine injuriously afterwards.

VINES FOR VINERY AND IN POTS (Experimenter).—Your two small Golden Champion vines we would plant now, provided you can keep the ground warm and rather dry afterwards; if not, defer it until March. See advice to another correspondent. Prune back the vines, so as to have the necessary height inside the house, and after cutting rub off the buds beneath the cut, except one or two to take the whole of the vigour of the vine. The vines in 12-inch pots, which you wish to fruit next summer, should not be repotted now, but you can top-dress the soil in the pots, and may also widen the hole in the bottom, and set the pots in a border, or on another pot filled with good soil. Those you are to plant in a vinery may be cut down at the necessary height, and you can take what shoots from them you consider necessary.

BOILER (Miss H.).—Have the saddle-boiler of cast iron, it is more durable than wrought iron.

CULTURE OF GINGER (J. K.).—Grow ginger much as you would do one of the Cannas. A shallow box, about 6 inches deep, we should approve of, placing the roots about 3 inches beneath the surface, and giving a rough sweet top-dressing when the shoots were 6 inches in height. Plenty of heat and moisture are necessary when the plant is growing, and the water must be lessened as the leaves exhibit signs of decay. The roots make a very excellent preserve, and are best kept in a dry dormant state in the box, and much cooler, until fresh planted about February. We cannot say where you can find roots for planting; most likely our principal nurserymen could supply you. A late friend of ours used to grow it largely for preserving, but we cannot recollect of one who does so now. We have tasted the preserved ginger, and it seemed to us an almost unapproached luxury, but we do not know the details of placing in syrup, &c.

GLAZING A GREENHOUSE WITH 3-INCH LAPS (Nelson).—We know no remedy except reglazing. We do not think, however, that you will have a greater chance of breakage if your laps are rather close. You object to putting the laps, but are long the dust, &c., will accumulate, and will thus make a 3-inch dark place at every lap. One-eighth of an inch is a general lap. Ere long we shall have sheet-glazing and no lap. Have we read your writing aright? Even a 1-inch lap we should consider quite out of the way.

VARIOUS (Idem).—The bit of plant is, we presume, the *Veronica speciosa variegata*. It is easily cultivated in peat and loam, and will need a cool greenhouse from October to April. The piece marked B is an *Azalea*, as far as we can judge of the *Variegata* section, and is troubled, we fear, with thrips, for which you must smoke and syringe. C looks like the leaf of a *Maranta*, but a scrap of leaf will not enable us to name plants. D, the *Camellia* leaf, is blotched and burned either by

soars in the glass, by drip from rusty iron, or from condensed moisture and a powerful sun. You need not thin the buds if they have room to expand. Weak manure water will help them.

WIDTH OF FRUIT WALL COPING (A Subscriber).—All copings to walls that project more than 8 or 4 inches are injurious in summer. We have little faith in copings alone as a protection against frost in spring, unless from 15 to 18 inches wide, and these should be removed when all danger from frost is over. Iron brackets, with screws to fasten the wooden copings to, answer well, and the copings will last many years if put away when not needed.

FLUE-HEATING A GREENHOUSE (County Cork).—For a house 20 by 12, by 12, a flue 9 inches wide, outside measure, and formed at the sides with two bricks on edge, and covered with a 9-inch tile, would do. If you use 9-inch earthenware tiles in-stead of brick, use brick for 2 yards from the furnace. The bars of the furnace should be from 18 to 20 inches below the bottom of the flue. We should like the flue round, as you propose. A furnace 2½ feet long would be ample; the half of that length in the middle would do for the bars. As your house is small it might be as well to use all brick, but the earthenware pipes answer well enough when it is not required to make them very hot, so as to incur the risk of cracking them.

CHRYSANTHEMUMS THIS SEASON (A Lady in Cheshire).—The *Chrysanthemums* generally have lasted in bloom a shorter time than usual. Such dull wet weather is provocative of mildew. The chief preventives are plenty of free air, good drainage, and enough of water.

LILIUM AURATUM (W. A. O.).—We would top-dress the soil in the pot of *Lilium* with rich compost, and not repot for another year. If your *Gesnera* is fibrous-rooted it wants similar treatment.

PEZIZA COCCINEA.—“J. E. Tynford,” wishes for some information about the pretty scarlet fungus, “*Peziza coccinea*,” which grows on dead sticks. Sticks with the fungus growing on them have been put in pots, and kept damp and in a shady place all the summer, in hopes of its appearing in great beauty next winter, but with bad success. Any information will oblige.

NOTICE OF DISCHARGE (D. M.).—If you were paid your wages weekly you could not legally claim more than a week's notice. You would be liable to legal penalties if you cut down trees which you had planted. An employer refusing to give a character has an aspect so damaging that you had better state the fact to your previous employer, perhaps he will again write what he said of you. Leave your place quietly, and stifle all suggestions of resentment.

VARIOUS (X. X. X.).—It is quite impossible for us to answer such a multitude of questions. For twenty postage stamps sent with your address you can have the “Garden Manual” free by post from our office. It contains the information you need about Onions, Leeks, Gooseberries, &c. Rivers' “Miniature Fruit Garden,” Pearson's “On the Orchard House,” “Plans of Flower Gardens,” &c., can all be had from our office, and contain most of what you require.

NAMES OF PLANTS (Anzios).—Your Fern is *Adiantum cuneatum*, or *Wedge-leaved Maiden-hair*. (W. Moorman).—We cannot identify plants merely by their leaves. (A Young Beginner).—*Phalenopsis Schilleriana*. Your plant must be very beautiful, but in number of flowers has been surpassed. (J. S. S. Nantwich).—The P is sounded. Your Fern is *Phymatodes Billardieri*. (N. E. A.).—*Pteris tremula*. (J. H. V.).—1, *Cymbidium sinense*; 2, *Maxillaria*, apparently allied to *M. picta*. (H. B.).—Seeds of a *Bauhinia*, the species not certain. S.w. in a stove. (Anna Harrison).—A garden variety of *Bouvardia*, we believe *B. delicata*. (J. Lister).—*Sedum carneum* variegatum of gardens.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 5th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed.. 30	29.463	29.326	40	30	44	44	S.W.	.56	Overcast, rain; snow, densely overcast; cloudy and stormy.
Thurs. 31	29.939	29.679	49	19	45	44	W.	.00	Fine, cloudy; very fine; clear and frosty.
Fri. . 1	30.022	29.775	42	34	40	42	S.W.	.04	Sharp frost; clear and fine; densely overcast, rain.
Sat. . 2	29.874	29.694	53	39	45	43	W.	.02	Clear and fine; very fine; densely overcast.
Sun. . 3	29.613	29.235	53	37	47	43	S.W.	.12	Boisterous with rain; showery; clear and fine.
Mon. . 4	29.924	29.863	52	37	45	43	W.	.08	Fine and clear; very fine; densely overcast, rain.
Tues.. 5	30.159	29.914	52	24	47	44	S.	.08	Boisterous with rain; showery; clear and fine.
Mean	29.842	29.639	49.71	31.43	44.14	43.23	..	0.90	

POULTRY, BEE, AND PIGEON CHRONICLE.

WHAT HAS BEEN AND IS TO BE DONE.

THERE was something kindly and hearty in the old style of beginning an epistle of any kind by sending “greeting.” We cannot do better than imitate it.

We this day issue our first number in 1869. Friends—subscribers, readers, advertisers, contributors—we greet you heartily. After, in accordance with our usual custom, expressing our gratitude that we have been spared to offer again our remarks on the past twelve months to an increasing number of readers, we have to congratulate ourselves that when we address our friends we believe we leave out none with whom we have to do. We desire to augment the number. Wherever two parties are concerned we have always made it our study to hold the balance evenly. In the words of some of our old City charters, “To be biassed neither by fear, favour, or

affection; to present no man from malice, but to do our duty as good and faithful” journalists “should do.” We are glad to say we believe we have succeeded—an increased, and increasing, circulation is our test and reward. We can sit down and speak gratefully to all; we are reaping the reward for no small anxiety and labour, and are gliding along the smooth waters of ease, having long left the turbulent and agitated waves of our early years behind us. We do not write thus without recollecting we owe this to those whom we are addressing, and we mention it that we may thank them for it.

Shows have increased in number in the past year. An agricultural meeting is hardly complete without poultry. This fact affords us great pleasure. It is as it should be. The surplus stock of amateurs will not do much towards feeding a nation, but if all the available resources for breeding poultry possessed by the agriculturists were put in action, an amount of food would be produced that would create astonishment. Not only would the food be increased, but the capital of the country would be similarly acted upon. It is not our province

to go into deep questions of science or political economy, but we must add, that if half we read of the difficulty of feeding the increasing population of Europe be true—from the fact the mouths increase while acres remain the same—then those who have hitherto pooh-poohed poultry, and have treated the whole subject as a “cock and hen question,” may look upon it as a valuable adjunct.

The subject of breeds has been ventilated, and an amateur may now go to an experienced dealer, and, having stated his requirements and conveniences, may be told at once the breed he requires. Birmingham, the originator of great shows, tried a notable experiment last year, by dividing classes in such a way that an exhibition should not only be the trial ground of amateurs but the resort of purchasers. Such can purchase anything they require. There are classes for single cocks, adults and birds of the year; of hens or pullets exhibited separately. It has been, like everything that enterprising Council undertakes, a complete success. Should entries increase at this popular place, as they have done lately, either they must be discouraged, or more space must be allotted to poultry. All lovers of the pursuit will be glad to find the County Palace again before the public. Many who can recollect the perfect exhibitions held in Liverpool some years since, were rejoiced to hear of the great gathering in December, which has been lately noticed in our columns. Manchester had again an excellent show, and it has now become one of the Christmas institutions of the place. In the north and north-western parts of England shows are frequent, often very successful, and almost always self-supporting. We are sorry we cannot say as much for the south and west of England; they make but little progress there. There is one cheering feature—poultry has become one of the elements of an agricultural meeting.

Dorkings have maintained their ground in 1868. We have again to chronicle an increase of weight. 9 lbs. formed the limit for a cock some years since, then cocks of 10 lbs. were heard of and seen, and now we have them over 12 lbs. Hens weighing 8 lbs. are common.

Cochin-Chinas have been distinguished for size and beauty throughout the year, and there has been a great increase in the numbers of the Grouse and Partridge-coloured birds of this breed.

Spanish have decidedly improved, but even now they are not what they were some years ago. In many otherwise grand specimens of the breed, the smooth white face is wanting, and is but poorly compensated by an uneven, rough, cauliflower face.

Brahmas now form one of the principal classes at all large shows. Their purity is only questioned by some of those who will not be convinced; their points are recognised and admitted, and numbers of their admirers can testify to their merits in filling up the list of qualities that constitute a really useful fowl. Two years since a new class was introduced for Light birds of this breed, and it is already numerously filled. In one or two instances where an extra prize has been offered for birds irrespective of colour, the Light have succeeded in eclipsing the dark.

We never know what to say of the Game. They are nearly perfect. The Black and Brown-breasted Reds have the call of all others. The Duckwings are not fancied as they were. The White, Piles, and Blacks are disappearing. There has been much discussion about trimming these birds. The advocates and objectors will have time to bring forward their reasons and arguments. Call them as we may, they are fighting birds, and most people like to see them in fighting trim.

Polands are decidedly looking up. The quality of those shown of late has been perfect, and they have also increased in numbers. It would be a pity to lose such beautiful birds.

Hamburghs remain about stationary. We think they were bred more carefully some years since, when some of the points were in discussion. A little opposition is, perhaps, as good for poultry as for other things. We can speak very highly of the Golden-spangled and Pencilled. The Silver-spangled have been good, but the Silver-pencilled have barely held their position. There has been an achievement in forming the classes for Black Hamburghs. They have been but a short time in existence, and they are not only very numerous but they are beautiful.

The success that attends the introduction of new classes is a most convincing proof of the increasing interest that is taken in the pursuit. The French breeds are an instance of it—Crève-

Cœurs and Hondans are among the popular favourites, and furnish their quota to a large show. *La Flèche* have fallen in public estimation. The former two will rank with the Spanish among the non-sitters. They not only lay many eggs, but the eggs are large. In the day when eggs are sold by weight they will be appreciated and sought for.

The “Variety class” has produced nothing very new, except a pair of birds with a hard name at Birmingham. We are sorry to note a decline in our old pets, the Sebright Bantams, but they are losing ground in numbers, and hardly hold their own in quality. Game Bantams make amends, and now form one of the largest and most attractive classes at all shows. It is no wonder. They are bred perfectly, and are models of beauty. The Blacks and Whites hardly hold their ground. At Birmingham we again saw some Cochin Bantams which we admired as much as ever.

Geese go on increasing, but the honours at many large shows have been awarded to the White as the best, where colour has been optional. Where will they stop? Geese of 30 lbs. weight. The Toulouse hold their own as the heaviest birds, if an average be taken, of any of the tribe.

Another change within the last few years—the Rouen Ducks are now not only more numerous, but they are heavier than the Aylesburys; a drake weighs 10 lbs., formerly an average-Goose only weighed 9 lbs. The beautiful and delicious Labrador, or Buenos Ayrean Ducks are shown numerously. They are all that can be desired—small, symmetrical, and brilliant in metallic lustre.

One more word about weight and we have done. Cock Turkeys of 30 lbs., hens of 17 lbs., are no longer marvels. They were commonly met with in 1868.

We have a sad duty to perform in alluding to the loss of one of our oldest and ablest Judges; one who assisted at the commencement of the pursuit, and whose worth was entirely known only to those who knew him thoroughly—we mean the Rev. Robert Palleine. Universally and deservedly respected, his death has caused a gap that cannot be easily filled.

We draw to a close. It is a great blessing that we are so wisely and happily constituted that we can always look to the future with hope. Where clouds and darkness have prevailed, we may look for brighter days and times. Where all has been clear and placid, we can look for a continuance. The year 1868 has been marked by no poultry convulsions. There have been no absorbing questions. There is now and then a slight difference; some amateur, “ill at ease,” ventilates a grievance; but it is done quietly, and generally publicity decides the question. We congratulate our correspondents on the tone of their letters. We thank all who assist us in any way in our pursuit, and we assure them it is no mere empty form, no mere repetition of unmeaning words, when to all we right heartily wish

A HAPPY NEW YEAR.

MISDOINGS AT POULTRY SHOWS.

I do not keep poultry of any kind, and therefore can have no self-interest in the following observations. I have read what has been said by “Nemo” and others on the subject of undesirable practices, which is a less offensive term than fraudulent practices, and more likely to gain friends to the good cause “Nemo” has taken in hand. Moreover, if prizes have been given for years by societies on the adjudication of first-rate judges (there being no rule to guide them), I cannot see how the practices can be called fraudulent, though they are undesirable. Also, I cannot perceive why trimming the faces of Spanish fowls, and dubbing Game cocks and Game Bantams, should be permitted, while plucking vulture-hocks is thought so heinous. Is it not desirable to forbid all mutilations and additions whatsoever? People will understand this; and I think if the word fraudulent were withdrawn, and a year’s grace allowed, that in the year 1870 reasonable men would consent to such a rule. It is plain that the charge of fraud by connivance must reach the judges as well as the exhibitors; for one cannot suppose that first-rate judges did not perceive these things. As many have dubbed their cocks, allow a year’s grace, and in 1870 use all your influence to stop all mutilations and additions. The last time that I helped to judge the roses at Kensington, I disqualified three boxes, and wrote my name at full length under the disagreeable word “disqualified.” I did not look at the names. I found in one box three of Cloth of Gold tied up with bast for a single truss! As soon as I was

opposite the box I suspected the device at once, and tucked them out with a long stick.

Now, if poultry societies will establish good sound rules, and select judges of eminence, character, and nerve, who do not care one farthing whom they please or whom they offend, poultry showing, which by a first-rate judge (of this county—he acted at Birmingham, I believe, last year), is said to be worse than horseracing, will become as honourable and creditable as it is now said to be the contrary. I give the name of the judge privately to the Editors. I would not allow the removal of a single feather. Every man may say, "I only removed a soiled feather." I presume that with good judges a soiled feather would not disqualify a bird otherwise deserving a prize. I suggest that such excellent and fair judges as Mr. Hewitt and Mr. Teebay should be consulted, and their co-operation asked. If Birmingham and Manchester would set the example, societies in other places would soon follow suit. Mutilations and additions are unfair towards the unsuspecting purchasers. Twisted, lopping, or spriggy combs may be hereditary and transmissible to the offspring. Hence, though Game cocks look best with dubbed combs, it may be, by removal of malformed combs, a great injury to purchasers whose interests should be protected. Go the whole hog! Insist upon the birds of all classes being shown without mutilation or addition of foreign substances, and we may hope that the term "worse than horseracing" will be no longer applied to poultry exhibitions, which are most useful and delightful.—W. F. RADCLIFFE.

[We fully appreciate the spirit in which this communication is penned, but we see no reason for qualifying the epithet "fraudulent" when applied to the act of trimming or dyeing birds in direct defiance of the published rules of an exhibition, such trimming and dyeing being for the express purpose of deceiving judges and purchasers, and thus obtaining, or intending to obtain, money which would not be obtained if the judges and purchasers were not so deceived.—Ens.]

FRAUDS AT POULTRY SHOWS.

WILL you be so good as to add my name to the protest against trimming fowls so spiritedly taken up by our friend "NEMO," who deserves the most hearty thanks of all honest exhibitors?

There is one point that has not yet been mooted as to our exhibitions that I for one should much like to see carried out—viz., that every bird exhibited shall either have been bred by the exhibitor or have been in his possession at least six months, or else that the breeder's name be mentioned in the catalogues, as is done at cattle shows. What credit is it to a man to gain a prize or commendation with a bird he has just bought? Whereas, if he had bred it he would have far more satisfaction in the prize; also, those who might purchase eggs of him for setting would know that they were purchasing eggs of a man who had bred some good birds, and not, as I fear is sometimes the case, of one who keeps a lot of roughs, and a show-bought of some one else to give his own a name.—PHILIP CROWLEY, *Culverton House, Atton.*

[We have received the following additional signatures for the protest:—

W. A. Burnell, Winkburn Hall, Southwell.

Georgina Burrell, Stoke Park, Ipswich.

* O. E. Cresswell, Hanworth Rectory, Hounslow.

G. S. Cruwys (the Rev.), Cruwys Morchard Court, Tiverton.

Francis James, Peckham Rye.

Matthew Leno, Dunstable.

Henry P. Leech, Woolpit, Bury St. Edmunds.]

OAKHAM POULTRY SHOW.

IN spite of the opinions Mr. Fowler has quoted, I think that the management was not so perfect as it will no doubt be hereafter. I sent my birds to the Show on the understanding—which, if I mistake not, I gathered from the prize list—that they would be lodged in the Riding School, whereas, "AN EXHIBITOR" tells us that they were placed in a cold tent, or, rather, as your own correspondent calls it, "a spacious marquee." This, possibly, could not be helped, and may not be a breach of good faith, but I submit that on another point an alteration would be an improvement. Although my residence is within 100 miles of Oakham, and close to a railway station, I was obliged to send my birds away at mid-day on Monday,

yet did not receive them again until Saturday. In fact, they were absent almost as long as if they had been to Birmingham instead of Oakham. The birds were, doubtless, well cared for while at the Show; but so protracted an absence from home is as unnecessary as it is injurious. I would suggest that on a future occasion, if the Show be held, as this year, on a Wednesday and Thursday, the pens should not be required at Oakham until 12 o'clock on Tuesday. The birds could then travel on Monday night, and arrive fresh on Tuesday. The judges, entering on their duties at noon on Tuesday, and continuing next day until 10 or 11 o'clock, would have ample time to do their work properly. Finally, the birds should be dispatched homewards the moment the Show is closed, and not be allowed to linger when delay may bring disease or death.—E. M. B. A.

TURKEYS' PENS AT EXHIBITIONS.

SOME time since I read in your Journal remonstrances from unjustly imprisoned Turkeys at two poultry shows. In the first instance the appeal was successfully made to the Bath and West of England Society, and when I visited their show at Salisbury I had the gratification of seeing these noble birds displaying their plumage in extensive pens. In the other case the Society ceased to exist, and, therefore, had not the opportunity of following so good an example.

At the Bristol Show now going on, I regret to observe a revival of niggardly accommodation, the less pardonable in these days of increased Turkey magnitude. Upon the floor is a long, narrow row of dismal cells, through which it is almost impossible to see the inmates, and these, if they survive their five days' incarceration, are not likely to come out of it unscathed.

Whilst writing upon the subject of Turkeys, I would suggest, that as these birds are judged chiefly by weight, it would be more satisfactory to exhibitors if the weights were affixed to the pens, especially as in instances like the present other points are hidden from view!—THE TURKEY'S ADVOCATE.

BRISTOL AND CLIFTON POULTRY SHOW.

WE are very glad that the Committee, by their boldness and liberal schedule, have at length put this Show next to Birmingham, having exceeded Manchester by twenty-two pens! We rejoice the more because they lost heavily by each previous Exhibition. In numbers the pens were—of Dorlings, 111; Spanish, 89; French fowls, 56; Polish, 24; Cochins, 164; Brahmas, 140; Hamburgs, 109; Game, 146; Game Bantams, 80; other Bantams, 65; "Other varieties," 49; Ducks, 43; Turkeys, 16; Geese, 7.

In *Brahmas* the hen class was much better than at Birmingham. Cocks and cockerels were rather poor on the whole; but the pullet class was surpassingly superior. There was hardly a bad pair. The first-prize birds at Birmingham were here only highly commended, and the cup Liverpool hens not even mentioned. In *Dorlings*, Mr. Douglas's pen was excellent, though it was only highly commended. The birds were worth their price of £25. Some of the best birds were passed over, apparently because tampered with notably. We are told, but wait for further information, of trimmed hocks, and several very good Buff Cochins, which were plucked at the tails. Also, that several excellent Game birds seemed to be passed over on account of the hackle being pulled out. We hope to publish further details next week.

DORLINGS (Coloured).—Cockerel.—First and Cup, H. Lingwood, Barkington, Needham Market. Second, J. Martin, Claines, Worcester. Third, J. Elgar, Osmanthorpe Hall, Newark. Highly Commended, Mrs. Arkwright; J. Martin; O. E. Cresswell, Hanworth; L. Patton, Hillmore, near Tannaton; T. Rogers, St. Helen's; Rev. G. Hustler, Stillingleet Vicarage, York. Commended, R. W. Beachey, Kingskerswell; J. S. Lowndes, Hartwell, Aylesbury. **Pullets.**—First and Commended, R. W. Beachey. Second, H. Lingwood. Third, L. Patton. Highly Commended, Hon. H. W. Fitzwilliam, M.P., Wentworth Woodhouse; J. Douglas, Clumber; Mrs. A. C. Thynne, Pountney, Stratton; Mrs. M. Seamons, Hartwell, Aylesbury; Mrs. Arkwright, Etwell Hall, Derby; Lieut.-Col. Lane, Bracknell; L. Patton; H. E. Brown; Miss J. Milward, Newton St. Loe.

DORLINGS (Coloured).—Cock.—First, L. Patton. Second and Third, J. Martin. Highly Commended, Dr. Campbell; Mrs. Arkwright. Commended, Hon. H. W. Fitzwilliam, M.P. **Hens.**—First and Cup, J. Fox, St. Bees. Second, Dr. Campbell. Third, Lieut.-Col. Lane. Highly Commended, C. Cork, New Shoreham. Commended, Hon. H. W. Fitzwilliam, M.P.; J. Douglas.

DORLINGS (Silver-Gray).—Cockerel.—First, Lieut.-Col. Lane. Second, J. S. Lowndes. Third, O. E. Cresswell. **Pullets.**—First, D. Hardie, Sorbie. Second, J. Mead, Bliston Road, Wolverhampton. Third, J. Elgar.

DORLINGS (Silver-Gray).—Cock.—First, J. Shorthose, Newcastle-on-Tyne. Second, R. Smalley, Lancaster. Third, Miss Hales, Canterbury. **Hens.**—First, J. Longland, Grendon. Second, Rev. J. F. Newton, Kirby-in-Cleveland. Third, D. Hardie.

COCHINS (Cinnamon and Buff).—Cockerel.—First, Cup, and Second, W. A. Taylor, Manchester. Third, H. Lingwood. Very Highly Commended,

W. A. Burmell, Southwell, Notts. Highly Commended, H. Mapplebeck, Moseley, Birmingham; J. Cattell; R. Chase, Balsall Heath, Birmingham; D. Young, Leamington. *Pullets*.—First and Cup, H. Mapplebeck. Second, F. W. Rust, Hastings. Third, Mrs. Burrell, Stoke Park, Ipswich. Highly Commended, Hon. Mrs. Sugden, Wals; W. A. Taylor; Mrs. Christie, Glydebourne, Hastings. Commended, Miss J. Milward; G. H. Proctor, Durham.

Cochins (Cinnamon and Buff).—*Cock*.—First, H. Mapplebeck. Second and Third, W. A. Taylor. Highly Commended, H. Mapplebeck; C. Sidgwick, Ryddeldeen Hall, Keighley; J. H. Daws, Moseley Hall, Birmingham. *Hens*.—First, W. A. Burmell. Second and Third, H. Mapplebeck. Highly Commended, W. A. Taylor.

Cochins (Brown and Partridge).—*Cockerel*.—First, W. A. Taylor. Second, G. Charnley, Preston. Third, E. Tudman, Whitechurch, Salop. Commended, H. Story, Lockington Hall, Derby. *Pullets*.—First, J. K. Fowler, Aylesbury. Second, W. A. Taylor. Third, G. Charnley.

Cochins (Brown and Partridge).—*Cock*.—First, E. Tudman. Second, T. Stretch. Third, A. O. Worthington, Newton Park, Burton-on-Trent. Highly Commended, L. Lane, Bristol. Commended, C. J. Lambert, Kingswood, Bristol. *Hens*.—First, W. A. Taylor. Second, T. M. Derry, Gadney. Third, E. Tudman. Commended, J. Stephens, Walsall.

Cochins (White).—*Cockerel*.—First and Third, Mrs. A. Williamson, Queenborough Hall, Leicester. Second, J. Shorthose. Highly Commended, J. Gardiner, Bristol; W. A. Taylor; G. Shrimpton, Leighton Buzzard. *Pullets*.—First, Mrs. A. Williamson. Second, G. Shrimpton. Third, A. O. Worthington. Highly Commended, R. Chase.

Cochins (White).—*Cock*.—First, R. Smalley. Second, W. A. Taylor. Third, Rev. F. Taylor, Longtown. Highly Commended, Mrs. A. Williamson; F. W. Zurborst, Dublin. Commended, R. Chase. *Hens*.—First, R. Smalley. Second, Rev. F. Taylor. Third, A. O. Worthington. Highly Commended, Capt. D. Lane, Great Barr Hall, Birmingham. Commended, G. Shrimpton; R. Chase.

Brahmas (Dark).—*Cockerel*.—First, J. Douglas. Second, Mrs. Hurt, Alderwasley. Third, E. Leech, Rochdale. Highly Commended, H. Dowsett, Pleshey, Chelmsford; J. Smith, Keighley; Lieut.-Col. Lane; Rev. J. Bowen, Talgarth; Hon. Miss Douglas Pennant; Mrs. Hurt. Commended, K. Jopp, Aberdeen. *Pullets*.—First and Cup, Rev. J. Bowen. Second and Third, Mrs. Hurt. Highly Commended, Lieut.-Col. Lane; E. Leech; K. Jopp; L. Wright, Kingsdown, Bristol; J. Stuart, Thistlebank, Helensburgh; W. Hargreaves, Bacon; Mrs. Hurt; H. Lingwood, Martlesham; Rev. E. Alder, Etwell Vicarage; H. Stephenson, jun., Lymington Rectory. Commended, W. Sims, Stroud; Mrs. N. Greuville.

Brahmas (Dark).—*Cock*.—First and Cup, Mrs. Burrell. Second, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor. Third, E. Leech. Highly Commended, Mrs. Allsopp, Hindlip Hall, Worcester; Mrs. Hurt. *Hens*.—First, E. Leech. Second, K. Jopp. Third, H. Lingwood, Martlesham. Highly Commended, M. Leno, Dunstable. Commended, A. O. Worthington.

Brahmas (Light).—*Cockerel*.—First, H. Dowsett. Second, F. Crook, Forest Hill. Third, W. Whiteley, Sheffield. Highly Commended, H. Lacy, Hebbden Bridge. *Pullets*.—First, H. Lacy. Second, J. Pares, Postford. Third, W. Whiteley. Highly Commended, L. H. Rickette, Banwell.

Brahmas (Light).—*Cock*.—First, H. Lacy. Second, H. Dowsett. Third, J. Pares. *Hens*.—First, F. Crook. Second, H. Lacy. Third, H. M. Maynard, Holmeewood, Ryde, Isle of Wight. Highly Commended and Commended, H. Dowsett.

Spanish.—*Cockerel*.—First and Cup, Miss Hyde, Badminton. Second, H. Beldon, Goltstock. Third, H. Lane, Bristol. Highly Commended, E. Jones, Clifton; Mrs. Parsley, Kigdown, Bristol; W. R. Bull, Newport Pagnell; H. Lane. Commended, T. Bamfield, Brandon Hill, Bristol; Mrs. Parsley; R. Barro; H. Stephenson. *Pullets*.—First, Miss Hyde. Second, E. Jones. Third, W. A. Taylor. Highly Commended, Miss Hyde; E. Jones; J. Claws, Walsall; T. Bamfield; Mrs. Parsley; J. R. Rodbard, Aldwick Court, Writington; H. Lane; J. Thresh, Bradford; P. H. Jones, Fulham.

Spanish.—*Cock*.—First, Mrs. Hyde, Badminton. Second, J. R. Rodbard, Third, E. Jones. Highly Commended, E. Jones; H. Lane. Commended, J. Barry, Tottersdown Bristol; H. Lane. *Hens*.—First and Cup, Mrs. Hyde. Second, Hon. Miss D. Pennant. Third, H. Beldon. Highly Commended, L. H. Rickette.

French.—*Cockerel or Cock*.—First, Hon. H. W. Fitzwilliam, M.P. (La Fleche). Second, W. Blinckhorn (Crève-Cœur). Third, C. Homfray, jun., Glen Oak, Cserleon (Crève-Cœur). Highly Commended, Hon. H. W. Fitzwilliam, M.P. (Crève-Cœur); H. Beldon (Houdan); F. W. Zurbat (Crève-Cœur); F. Brewer, Lostwithiel (Houdan); J. K. Fowler (French); Mrs. Wilkin, Bootle Hill (Crève-Cœur and Houdan). *Pullets or Hens*.—First, Mrs. Wilkin (Crève-Cœur). Second, Hon. H. W. Fitzwilliam, M.P. (La Fleche). Third, H. M. Maynard (Houdan). Highly Commended, W. Blinckhorn (Crève-Cœur); Col. Stuart Wortley, Grove End Road, London (Crève-Cœur); J. K. Fowler (Crève-Cœur). Commended, W. R. Park, Melrose (Crève-Cœur); J. C. Cooper, Cooper Hill, Limerick (La Fleche); J. B. Masefield, Ledbury (Houdan); Mrs. Wilkin (Crève-Cœur).

Hamburgs (Gold-spangled).—*Cockerel or Cock*.—First, N. Marlor. Second, H. Beldon. Third, E. Brierley. Highly Commended, J. Walker, Haya Park, Kuareborough; W. A. Hyde, Ashton-under-Lyne. Commended, N. Barter, Plymouth. *Pullets or Hens*.—First and Cup, W. A. Hyde. Second, H. Beldon. Third, J. Walker. Highly Commended, F. Greenwood, Rochdale.

Hamburgs (Silver-spangled).—*Cockerel or Cock*.—First, Cup, and Second, H. Beldon. Third, W. A. Taylor. Highly Commended, J. Smith, Openshaw; J. Fielding, Newchurch, Manchester. Commended, F. Pittis, jun., Newport, Isle of Wight. *Pullets or Hens*.—First, W. A. Taylor. Second, H. Beldon. Third, H. Pickles, jun., Earby, Skipton. Highly Commended, J. Fielding.

Hamburgs (Gold-pencilled).—*Cockerel or Cock*.—First, W. R. Park. Second, T. Wrigley, jun., Tonge. Third, H. Pickles, jun. Highly Commended, J. Walker; H. Beldon; J. Smith; F. Pittis, jun.; Duke of Sutherland, Trentham. Commended, F. Pittis, jun. *Pullets or Hens*.—First, Duke of Sutherland. Second, H. Beldon. Third, W. R. Park. Highly Commended, F. Perrin, Bristol.

Hamburgs (Silver-pencilled).—*Cockerel or Cock*.—First, H. Beldon. Second, F. Pittis, jun. Third, Duke of Sutherland. Highly Commended, J. Walker; W. Bearstow, Fearcliff, Bingley; W. Wilson, Rushbed, near Rawtenstall. *Pullets or Hens*.—First, W. M. Mann, Kendal. Second, Duke of Sutherland. Third, F. Pittis, jun.

GAME (Black-breasted and other Reds).—*Cockerel or Cock*.—First, J.

Fletcher. Second, R. Hall, Cambridge. Third, S. Mathew, Stowmarket. Highly Commended, W. H. Stagg, Netheravon; J. Martin; S. Mathew; Rev. G. S. Cruwys, Tiverton. Commended, J. Fletcher; J. Douglas; W. Rogers, Beverley. *Pullet or Hen*.—First and Cup, T. West, St. Ann's, Ecclestone. Second, G. E. Peach, Shiffall, Salop. Third, J. Bowness, Newchurch, Manchester. Highly Commended, J. Fletcher; W. Johnson, Stasley; W. H. Stagg; Rev. H. Helyar, Pendomer Rectory; H. Waller, Calce; J. Forsyth, Wolverhampton; J. W. Jones.

GAME (Duckwings and other Greys and Blues).—*Cockerel or Cock*.—First and Cup, W. Boyes. Second, S. Mathew. Third, J. Fletcher. Highly Commended, J. Douglas; H. Loc. Commended, M. A. Forde, Fisherton, Delamare; Rev. F. Watson, Kelvedon. *Pullet or Hen*.—First, G. S. Sainsbury, Devizes. Second, J. Fletcher. Third, H. C. & W. J. Mason, Drighlington.

GAME (Any other variety).—*Cockerel or Cock*.—First, J. Fletcher (Pile). Second, Rev. G. S. Cruwys. Third, R. Robbins, Kenilworth (Black). Commended, R. Robbins (Black). *Pullet or Hen*.—First, T. Whittingham, Nantwich (Pile). Second, R. Robbins (Black). Third, J. Fletcher (Pile).

POLISH (Any variety).—*Cockerel or Cock*.—First, Mrs. E. Procter, Hull. Second, H. Beldon. Third, G. E. Adkins, Lightwoods, Birmingham (Silver). Highly Commended, J. Smith (Silver-crested); P. Unsworth, Louton, Newton-le-Willows; T. P. Edwards, Lyndhurst; C. W. Washbourne, Gloucester (Silver); T. Dean, Keighley. Commended, H. Beldon; P. Unsworth; D. Mutton, Brighton. *Pullets or Hens*.—First and Cup, G. E. Adkins. Second, H. Beldon. Third, T. P. Edwards. Highly Commended, P. Unsworth; Mrs. E. Procter. Commended, D. Mutton.

ANY OTHER DISTINCT VARIETY.—*Cockerel or Cock*.—First, J. Smith (Black Hamburg). Second, R. Loft, Woodmansey (Sultan). Third, Mrs. Lucas, Cleve (White Dorking). Highly Commended, O. E. Cresswell (White Dorking); Rev. W. Serjeant, Acton Burnell (Black Hamburg); Mason & Walker, Denton (Black Hamburg). Commended, Mrs. E. E. Llewellyn, Court Celman (Sultan); J. Hinton, Hinton, Bath (Malay); J. C. Isaac, Stapleton (Minorca); H. J. Godfrey, Hammersmith (Black Cochins); J. C. Cooper (Sultan); J. Choyce, Binwall Grange, Atherstone (White Dorking); S. Butterfield, Keighley (Black Hamburg). *Pullet or Hens*.—First, C. Sidgwick (Black Hamburg). Second, J. W. Brown, Bristol (Black Minorca). Third, J. M. Kilvert, Ludlow (Black Hamburg). Highly Commended, J. C. Isaac (Minorca). Commended, H. J. Godfrey (Black Cochins); J. Smith (Black Hamburg); Mason & Walker (Black Hamburg).

GAME BANTAMS (Black-breasted and other Reds).—First, E. Payne, Cardiff. Second, J. J. Cousins, Chapel Allerton. Third, J. W. Morris, Rochdale.

GAME BANTAMS (Any other variety).—First and Cup, J. Crosland, ind., Wakefield. Second, W. S. Forrest, Greenhithe (Duckwing). Third, J. J. Cousins.

BANTAMS (Gold and Silver Seabrights).—First and Third, Rev. G. S. Cruwys. Second, Rev. G. F. Hodson, North Petherton. Highly Commended, M. Leno; H. Draycott, Humberstone; Rev. G. F. Hodgson.

BANTAMS (Black, Clean-legged).—First, S. & R. Ashton, Mottram. Second, E. Cambridge, Bristol. Third, H. M. Maynard. Highly Commended, H. Mapplebeck; T. C. Harrison, Hull; H. M. Maynard; H. Pickles, jun. Commended, E. Cambridge; M. Ridgway, Dewsbury; R. B. Riley, Tonkin & Tuckey, Bristol.

BANTAMS (White, Clean-legged).—First, H. Beldon. Second, W. A. Taylor. Third, Rev. F. Tearle, Gazeley Vicarage, Newmarket. Highly Commended, E. Pritchard, Tattenhall. Commended, Rev. F. Tearle.

BANTAMS (Any other distinct variety).—First, H. Draycott. Second, Mrs. A. Woodcock, Rearsby, Leicester (White Japanese). Third, A. Aldridge, Clifton (Feather-legged).

GAME BANTAMS (Any variety).—*Cock*.—First and Cup, J. R. Robinson, Sunderland. Second, J. W. Kellaway, Merston Cottage, Isle of Wight. Third, W. Boucher, Notting Hill (Black Red). Highly Commended, G. Shrimpton, Leighton Buzzard (Black Red).

BANTAMS (Any variety except Game).—*Cock*.—First and Cup, T. Davies, Newport, Mon. Second, Tonkin & Tuckey, Bristol (Black). Third, E. Cambridge. Highly Commended, A. Aldridge (White-booted). Commended, H. Beldon.

DUCKS (White Aylebury).—First and Cup, Mrs. M. Seamons. Second, J. K. Fowler. Highly Commended, Mrs. M. Seamons; W. Foulds.

DUCKS (Ronen).—First, L. Patton. Second, J. K. Fowler. Highly Commended, G. Hanks, Malmesbury. Commended, L. Patton; J. Fox.

DUCKS (Black East Indian).—First, Rev. W. Serjeantson. Second, Highly Commended, and Commended, W. E. George, Stoke Bishop, Bristol.

DUCKS (Any other variety).—First and Second, C. N. Baker (Mandarin and Carolina). Highly Commended, Zoological Society, Clifton (Carolina); T. C. Harrison. Commended, H. Mapplebeck; Zoological Society (Mandarin); J. Jennens, Handworth (Wild); C. Homfray, jun. (Mandarin).

GEES (Any variety).—First, J. K. Fowler. Second, Mrs. M. Seamons. Highly Commended, A. Sperrin, Bitton, Bristol.

TURKEYS.—First, L. Patton (Cambridge). Second, J. Jennens. Third, E. Leach. Highly Commended, J. N. Beasley, Bampton; Miss J. Milward; L. Patton.

PIGEONS.

CARRIERS (Any colour).—First, J. C. Ord, Pimlico. Second, F. T. Wiltshire. Highly Commended, G. S. Hockey, Durdham Down; E. Walker, Leicester (Dun); H. M. Maynard (Black); F. Crossley. *YOUNG*.—First and Cup, F. T. Wiltshire, West Crofton. Second, H. M. Maynard (Black). Highly Commended, A. Jones, Stapleton (Dun); F. Crossley, Elland. Commended, C. Cork, New Shoreham (Black); H. M. Maynard (Black); G. Charnley.

POUTERS (Any colour).—First and Cup, F. Crossley (Blue). Second, F. J. Leach, Middlesborough. Commended, F. J. Leach; G. Bulpin; P. H. Jones.

TUMBLERS (Almond).—First and Second, F. T. Wiltshire. Highly Commended, J. Fielding, jun., Rochdale. Commended, F. J. Leach.

TUMBLERS (Any other variety).—First, F. Crossley. Second, C. Eulpin, Bridgewater.

RUNS (Any colour).—First and Second, T. D. Green, Saffron Walden. Highly Commended, H. Yardley, Birmingham. Commended, J. Bailey, jun., Mount Street, London.

JACOBINS (Any colour).—First, P. H. Jones. Second, F. J. Leach. Highly Commended, J. W. Edge, Birmingham. Commended, F. J. Leach.

FANTAILS (Any colour).—First and Very Highly Commended, H.

Yardley. Second, C. Bulpin. Highly Commended, H. Draycott (White); H. M. Maynard (White); W. H. Tomlinson, Newark.

TAMPETERS (Any colour).—First, F. Sale, Derby. Second and Commended, C. Bulpin.

OWLS (Any colour).—First and Highly Commended, P. H. Jones. Second and Very Highly Commended, J. Fielding, jun.

NUNS.—First, P. H. Jones. Second, C. Bulpin.

TURBITS (Any colour).—First and Cup, F. Sale. Second, C. Bulpin. Highly Commended, J. Fielding, jun. Commended, F. J. Leach; H. Yardley; P. H. Jones.

BARBS (Any colour).—First and Second, F. T. Wiltshire. Highly Commended, G. Charley. Commended, J. H. Ivimey.

DRAGONS (Any colour).—First, C. Bulpin. Second, D. Young (White). Highly Commended, H. M. Maynard (Blue).

ANY OTHER DISTINCT VARIETY.—First, H. Draycott (Toys). Second, H. Yardley. Highly Commended, H. Draycott (Toys); J. Bailly, jun. (Arch-angels). Commended, H. Yardley; J. Percival, Peckham (Ice); W. S. Leder, Bathwick (Frillbacks and Russian).

JUDGES.—*Poultry*: Mr. E. Hewitt, Birmingham, and Mr. R. Teabay, Fulwood, Preston. *Pigeons*: T. J. Cottle, Esq., Cheltenham.

CANONBIE POULTRY SHOW.

JUST across the English border, fifteen miles from Carlisle by the Waverley route of railway, and midway between Longtown and Langholm, where the valley of the Liddle runs into the woody and lovely Eskdale, lies the rural and picturesque parish of Canonbie. On an elevated ground, overlooking some of the finest scenery in the south of Scotland stands the spacious and handsome class-rooms of the parish school. Here, on the 24th and 25th of December, was held the Canonbie Society's second annual Show of Poultry, Pigeons, and Cage Birds, and a better exhibition of first-class birds has seldom, if ever, been seen in a country district. The quality of the *Dorkings* especially was much praised by all who know the points of these beautiful birds. The four different classes of *Hamburghs* added largely, by the beautiful plumage of the birds, to the effect of the Show, whilst the pen of *Cochins* which took the first prize proved to be the finest we have seen at any exhibition of poultry this season. The entries of *Pigeons* were numerous, and the birds of unexceptionable quality. The *Canaries*, especially in the Scotch Fancy classes, were well represented. The comfortable and well-adapted pens, their neat appearance, and effective arrangement met with hearty approbation from the numerous visitors.

GAME (Any colour).—*Cock*.—First and Third, J. Brough, Carlisle. Second, H. M. Julian, Hull.

DORKINGS (Silver).—First, — Reed, Mont. Second, W. H. Church, Sark Tower. Highly Commended, A. Warwick, Outer Woodhead. *Chickens*.—First, — Reed. Second, D. Hardie, Sorbie. Highly Commended, — Doughty, Burnfoot; W. H. Church; A. Warwick; W. Urquhart, Langholm.

DORKINGS (Dark).—First and Highly Commended, — Reed. Second, Miss Maxwell, Priorylunn. *Chickens*.—First, D. Hardie. Second — Reed. Highly Commended, D. Hardie; Miss Maxwell; W. Davidson, Potholm; Miss Malcolm.

SPANISH.—First, W. Paterson. Second, — Reed. Commended, E. Grieve, Chaplehill. *Chickens*.—First, H. Wilkison, Earby, Skipton. Second, W. Paterson. Highly Commended, J. Telford, Skippers; Miss J. Nelson.

GAME (Black or Brown Red).—First, J. Brough. Second, A. Hyslop, Newton. Highly Commended, F. Graham, Rowanburn. *Chickens*.—First, J. Brough. Second, R. Irving, Langholm. Highly Commended, W. Hogg, Rowanburn. Commended, J. Connell, Marsh House.

COCHIN-CHINA (Any colour).—First, Miss J. Nelson. Second, Bowman and Fearon.

HAMBURGS (Golden-spangled).—First, W. Smith. Second, R. Tyson, Longtown. Highly Commended, W. Irving, Evertown; T. Musgrave.

HAMBURGS (Golden-pencilled).—First, E. Grieve. Second, R. Irving. Commended, R. Goodman.

HAMBURGS (Silver-spangled).—First, W. Bowe. Second, J. M'Adam, Priorylunn.

HAMBURGS (Silver-pencilled).—First, W. H. Church. Second, J. M'Grave.

ANY OTHER VARIETY.—First, — Beattie, Rink, Selkirk (Brahma Pootra). Second, Miss Fenwick, North House (Brahma Pootra).

BANTAMS (Black-breasted or Brown Red).—First, Bowman and Fearon, Whitehaven. Second, D. Hardie. Highly Commended, J. Wallace, Ravenswood; H. Nicholson, Holborn Hill; G. M'Millan, Jedburgh.

BANTAMS (Duckwings, Piles, Brown Reds).—First, Bowman and Fearon. Second, J. Wallace, Bolton. Commended, W. Scott, Jedburgh; J. Lunn, Jedburgh.

TURKEYS.—*Poult*.—First, — Reed. Second, D. Hardie.

GESE.—First, D. Hardie. Second, Miss Church. Highly Commended, — Reed.

DUCKS (Aylesbury).—First, D. Hardie. Second, — Lattimer, Forgebrahead. Highly Commended, A. Warwick.

DUCKS (Rouen).—First, A. Grieve, Albierigg. Second and Highly Commended, D. Hardie.

DUCKS (Any other variety).—First, D. Hardie (Brown Call). Second, C. Davidson, Claygate.

SELLING CLASS.—First, — Reed (Dorkings). Second, — Doughty (Rouen Ducks). Third, — Wilkinson (Spanish).

LOCAL SWEEPSTAKES.—First, Mrs. Thomson. Second, T. Graham, Rowanburn.

DUCKS (Any variety).—First, J. Common, Hardingside. Second, J. Davidson, Grindstonehead. Third, R. Lattimer.

ANY VARIETY (Cottagers' Classes).—First, R. Lattimer. Second, T. M'Glaeson, Orchard (Silver Dorkings). Third, C. Little (Spanish).

PIGEONS.

CROPPERS.—First, Messrs. Towerson, Egremont. Second, G. R. Sibson. Highly Commended, G. R. Sibson; R. Irving, Langholm.

TUMBLERS.—First, J. Pringle, Newcastle-on-Tyne. Second, F. Graham, Birkenhead. Highly Commended, G. R. Sibson; Messrs. Towerson; J. Sibson, Carlisle; R. Irving; J. Campbell; F. Graham.

JACOBINS.—First, Messrs. Towerson. Second, J. Sibson. Highly Commended, Messrs. Towerson; J. Sibson.

FANTAILS.—First, F. Graham. Second, J. Pringle. Highly Commended, J. Sibson.

CARRIERS.—First, F. Graham. Second, Messrs. Towerson. Commended, J. Sibson; J. Campbell.

BARBS.—First, J. Cunningham, Langholm. Second, J. Campbell. Commended, J. Sibson.

NUNS.—First, J. Sibson. Second, J. Campbell.

TURBITS.—First, Messrs. Towerson. Second, J. Sibson.

ANY OTHER VARIETY.—First and Second, F. Graham (Owls). Highly Commended, Messrs. Towerson; J. Sibson (Owls).

SELLING CLASS (Any variety).—First, Messrs. Towerson. Second, J. Sibson. Third, Thwaytes & Graham (Trumpeters). Highly Commended, Messrs. Towerson; J. Sibson (Magpies, Pouters, and Tumblers).

CANARIES.

SCOTCH FANCY (Yellow).—*Cock*.—First, Miss Martin, Canonbie. Second, A. Johnstone, Bowholm. *Hen*.—First, R. Carr, Carlisle. Second, R. Graham.

SCOTCH FANCY (Buff).—*Cock*.—First, J. Chambers, Longtown. Second, A. Johnstone. *Hens*.—First, A. Johnstone. Second, Miss Martin.

FANCY FLECKA (Buff).—*Hen*.—First, Withheld. Second, R. Murray, Bowholm.

GOLDFINCH MULES (Marked).—*Cock*.—First and Second, R. Graham (Buff and Yellow).

COMMON (Yellow or Buff).—*Cock*.—Second, R. Graham (Yellow). *Hen*.—First, R. Graham (Yellow). Second, J. Davidson, jun. (Yellow).

COMMON FLECKA (Yellow or Buff).—*Cock*.—First, J. Cunningham, Langholm. Second, R. Wylie, Parkhead. *Hen*.—First, R. Wylie. Second, R. Graham.

JUDGES.—Mr. Dixon, North Park, Clayton, Bradford, and Mr. Darling, Hawick.

LANGHOLM POULTRY SHOW.

THE seventh annual Show of the Eskdale Poultry Society took place in the large hall of the Temperance Hotel at Langholm, December 31st and January 1st. There were upwards of three hundred entries of Poultry, Pigeons, and Cage Birds, and the following awards were made:—

GAME COCK (Any colour).—First, E. Aykroyd, Bradford. Second, H. M. Julian, Whitefriars Gate, Hull. Third, J. H. Wilson, St. Bees. Highly Commended, J. Nicholson, jun., Carlisle.

DORKINGS (Silver).—First, T. Jackson, Bush, Ewes. Second, D. Hardie, Sorbie. *Chickens*.—First, D. Hardie. Second, W. Urquhart, Langholm.

DORKINGS (Dark).—First, D. Hardie. Second, J. White, Northallerton. *Chickens*.—First, J. White. Second, D. Hardie. Highly Commended, T. L. Jackson, Bush.

SPANISH.—First, J. Thresh, Bradford. Second and Highly Commended, W. Paterson, Langholm. *Chickens*.—First and Highly Commended, W. Paterson. Second, J. Thresh. Commended, M. Turnbull, Melrose Milla.

GAME (Black or Brown Red).—First, W. Tait, Heatherlee, Selkirk. Second, J. H. Wilson. Highly Commended, J. Brough; D. Hardie; W. Crosthwaite, Stanwix, Carlisle. *Chickens*.—First, D. Hardie. Second, J. Brough. Highly Commended, D. Hardie; E. Aykroyd.

COCHIN-CHINA (Any colour).—First, Bowman & Fearon, Whitehaven. Second, W. R. Park, Melrose.

BRABMA POOTRA (Any colour).—First, G. Dixon, jun., Whitehaven. Second, A. Skerriff, Selkirk. Highly Commended, C. Turner, Chester.

HAMBURGS (Golden-spangled).—First, S. & R. Ashton, Cheshire. Second, R. Dickson, Selkirk. Commended, W. Swire, Keighley, Yorkshire.

HAMBURGS (Golden-pencilled).—First, W. Bowe, Carlisle. Second, E. Grieve, Canonbie.

HAMBURGS (Silver-spangled).—First, W. Bowe. Second and Commended, D. Hardie.

HAMBURGS (Silver-pencilled).—First, J. Platt, Deau, Bolton. Second, T. Hanson, Keighley.

ANY OTHER VARIETY.—First, W. R. Park (Crève-Cœur). Second, R. Oliver, Langholm.

GAME BANTAMS (Black-breasted or Brown Red).—First, Bowman and Fearon. Second, D. Hardie. Highly Commended, J. Archibald; J. Crossland, Wakefield.

BANTAMS (Duckwings, Piles, and Brown Reds).—First, J. Crossland. Second, Bowman & Fearon.

TURKEYS.—Prize, D. Hardie. *Poult*.—First, D. Hardie. Second, T. L. Jackson.

GESE.—First, D. Hardie. Second, Mrs. Birkett, Ainstable.

DUCKS (Aylesbury).—First, D. Hardie. Second, Bowman & Fearon. Highly Commended, Mrs. Birkett, Ainstable.

DUCKS (Rouen).—First, D. Hardie. Second, — Grieve, Albierigg.

ANY OTHER VARIETY.—First, S. & R. Ashton (Carolina). Second, D. Hardie (Grey Call). Highly Commended, J. Logan, Leauk (Pintails); — Davidson, Claygate (Muscovy).

COTTAGERS' CLASS—ANY VARIETY (Town of Langholm only).—First, R. Irving, Langholm (Silver-spangled). Second, A. Eallantynes (Spanish). Third, J. Reid, Langholm (Golden-spangled).

COTTAGERS' CLASS—ANY VARIETY (for Eskdale).—First and Third, J. Telford, Skippers (Spanish). Second, Mrs. Harvey (Dorkings). Highly Commended, Mrs. Armstrong, Kirtou (Dorkings). Commended, Miss Graham, Bentpath (Dorkings).

SELLING CLASS (Open).—First, — Crosthwaite (Black Red Game). Second, Miss Bell, Billholm (Game Bantams). Third, — Archibald, Earls- town (Japanese Bantams). Highly Commended, T. L. Jackson (Dorkings); D. Hardie (Dorkings); Miss Paterson (White Geese); J. Platt, Bolton (Silver-pencilled).

PIGEONS.

CROPPERS.—First and Highly Commended, J. Ewart, Edinburgh. Second, J. Hawley, Bingley.

TUMBLERS (Almond).—First, J. Hawley. Second, J. Fielding, Rochdale.

TUMBLERS (Any other variety).—First, J. Fielding. Second, J. Hawley.

Highly Commended, J. Hawley; J. Campbell, Langholm; J. Bell, Newcastle-on-Tyne.

JACOBIANS.—First and Second, J. Hawley.

FANTAILS.—First, W. R. Park. Second, J. Hawley. Highly Commended, J. E. Spence, Edinburgh.

CARRIERS.—First, J. Hawley. Second, J. & W. Towerson, Egremont. Highly Commended, H. Yardley, Birmingham.

BARNS.—First, J. Hawley. Second, H. Yardley. Highly Commended, J. Fielding.

NUNS.—First, J. Campbell. Second, R. Paterson, Molrose.

TURNITS.—First, R. Paterson. Second, W. R. Park. Highly Commended, H. Yardley.

ANY OTHER VARIETY.—First, J. Fielding. Second, J. Sharp. Highly Commended, H. Yardley.

SELLING CLASS.—First, J. Sharp (Black-breasts). Second, W. Markland, Bolton (Black Carriers). Highly Commended, J. Hawley; Miss Bell, Billholm (Turbits); J. Sharp (Blue Fantails); J. Campbell.

CANARIES.

SCOTCH FANCY (Yellow).—Cock.—First, H. Donald, Galashiels. Second, G. Laidlaw, Galashiels. Hen.—First, W. Tinline. Second, T. Wilson, Hawick. Highly Commended, T. Scott, Galashiels.

SCOTCH FANCY (Buff).—Cock.—First, H. Donald. Second, W. Tinline. Highly Commended, R. Carr, Carlisle. Hen.—First, T. Darling, Hawick. Second, J. Hardie. Highly Commended, T. Scott; W. Tinline.

FANCY FLECKED (Yellow).—Cock.—First, T. Darling. Second, T. Wilson. Highly Commended, J. Hardie. Hen.—Second, T. Darling.

ANGY FLECKED (Buff).—Cock.—First, T. Wilson. Second, W. Tinline. Hen.—First, T. Darling. Second, G. Laidlaw. Highly Commended, J. Chorn.

GOLDFINCH MOLES (Marked).—Cock.—First, A. Graham, Rowsburn. Second, T. Wilson.

COMMON (Yellow or Buff).—Cock.—First, A. Graham. Second, Miss M. M. Rome, Langholm. Hen.—First, J. M'Vittie, Langholm. Second, W. Corie, Langholm.

COMMON FLECKS (Yellow or Buff).—Cock.—First, T. Wilson. Second, J. M'Vittie. Hen.—First, A. Graham. Second, J. Anderson.

JUNGLES.—Poultry and Pigeons: Mr. Henry Beldon, Goitstock, Bigley; Canaries: Mr. Thompson, Hawick.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S SHOW.

THIS was held in the Mechanics' Hall, Dumfries, on December 31st, and January 1st, and proved a very successful exhibition. The following is a list of the awards:—

GAME (Black Reds, Blacks, and other Reds and Blues).—First, J. Waddell, Acrehead. Second, J. Brough, Carlisle. Highly Commended, J. Harding, Dumfries. Commended, J. M'Creddie, Thornhill. Chickens.—First and Second, T. Maxwell, Maxwelltown. Highly Commended, J. Harding.

GAME (Duckwings, Whites, and other Greys).—First, T. Maxwell. Second, J. Brough. Highly Commended, T. Maxwell; J. Waddell. Chickens.—First and Second, J. Davidson, Longtown.

DORRINGS.—First, N. Wilson, Bridge of Urr. Second, G. F. Lyons, Kirkmichael. Highly Commended, W. F. H. Arundell, Barjag Tower. Chickens.—First, A. Skirving, Croys. Second, J. Thomson, Blakie, Crockettford. Highly Commended, Miss A. Johnstone Douglas, Lockerbie House.

SPANISH (Black).—First, Miss J. Nelson, Ecclefechan. Second, J. Thomson, Cockleicks. Chickens.—First, Mrs. Johnstone, Conhuth. Second, Miss J. Nelson.

COCHIN-CHINA (Any colour).—First, Lady J. Johnstone Douglas. Second, Miss J. Nelson. Chickens.—First, Lady J. Johnstone Douglas. Second, J. B. Storey, jun., Milnhead, Dumfries.

BAHMA POOTRAS.—First, Mrs. Waugh, Lochmaben. Second, J. Pearson, Castle Douglas. Highly Commended, Mrs. Gladstone, Capenoch, Thornhill. Chickens.—First, Mrs. Waugh. Second, Miss M. Gardiner, Murrayton.

HAMBOURGS (Golden-spangled).—First, W. Currie, Maxwelltown. Second, E. J. Jones, Whitehaven.

HAMBOURGS (Golden-pencilled).—First, J. Armstrong, Longtown. Second, R. Buttow, Longtown.

HAMBOURGS (Silver-spangled).—First, S. M'Bean, Castle Douglas. Second, G. Dobson, Longtown.

HAMBOURGS (Silver-pencilled).—First, J. Masgrave. Second, R. Service, Maxwelltown.

ANY OTHER VARIETY.—First, Miss Knott, Essex Park (Houdan). Second, Miss M. Gardiner, Murrayton (Crève-Coeurs).

BANTAMS (Golden and Silver-laced).—First, Miss M. Johnstone, Hlanths. Second, T. Douglas, Thornhill.

BANTAMS (Black).—First, Master W. Milligsn, Millbank. Second, J. Kerr, Dumfries.

BANTAMS (White).—First, J. Hutchison, Townhead, Monswald. Second, J. B. Storey, jun., Milnhead.

GAME (Black Reds, and other Reds).—First, J. Shars, Canal Cottage, Johnstone. Second, J. Waddell, Acrehead. Highly Commended, T. M'Call, Irongray.

GAME (Duckwings and other Greys).—First, J. Waddell. Second, J. Thomson, Maxwelltown.

DUCKS (Aylesbury).—First and Second, G. F. Lyons. Highly Commended, Miss A. Johnstone Douglas; Mrs. Henderson, Mochrum. Commended, Mrs. Bell, Farning Well, Dunscope.

DUCKS (Rouen).—First, J. Thomson. Second, E. J. Jones, Whitehaven. Highly Commended, Miss A. Johnstone Douglas; J. Thomson.

PIGEONS.

TUMBLERS.—First, G. White, Paisley. Second, R. Lennan, Eastfield Cottage.

CARRIERS.—First, G. J. Dart, Acrehead. Second, A. Wordrop, Kilmarnock.

POUTERS.—First, J. Waddell. Second, G. White, Paisley.

JACOBIANS.—First, J. Waddell. Second, J. Sharp, Johnstone.

FANTAILS.—First and Second, T. Douglas.

ANY OTHER DISTINCT BREED.—First, J. Sharp (Magpios). Second, A. Wardrop, Kilmarnock (Trumpeters).

TURBITS.—First and Second, J. Waddell.

BARNS.—First, G. J. Dart. Second, R. Lennan.

OWLS.—First, T. Douglas, Thornhill. Second, Miss Knott.

CANARIES.

SCOTCH FANCY (Yellow).—Cocks.—First, J. Graham, Kilmarnock. Second, J. Little, Dumfries. Third, J. Lanchland, Kilmarnock. Hens.—First, J. Thorpe, Dumfries. Second, J. Little. Third, J. Lanchland.

SCOTCH FANCY (Buff).—Cocks.—First and Second, J. Thorpe, Dumfries. Third, J. Little. Hens.—First and special prize for the best Canary in the Show, J. Thorpe. Second, J. Little. Third, J. Wilson, Newabbey.

PIEBALD (Yellow).—Cocks.—First, J. Thorpe. Second, J. Knocker, Drumpark. Third, D. Gibson, Lochmaben. Hens.—First, R. Edgar, Maxwelltown. Second, J. Graham, Kilmarnock. Third, R. Grove, Dumfries.

PIEBALD (Buff).—Cocks.—First, R. Bryden, Lochmaben. Second, A. Hope, Dumfries. Third, J. Little. Hens.—First, J. Knocker. Second and Third, J. Law, Lockerbie.

GOLDFINCH MOLES (Yellow or Buff).—First, J. Law, Lockerbie. Second, W. M'Donald, Newabbey. Third, J. Coupland, Dumfries.

GOLDFINCHES.—First, W. Eaglesham, Castle Douglas. Second, A. Martin, Castle Douglas. Third, R. Seaton, Newabbey.

JUDGES.—Poultry: Mr. H. Beldon, Bingley, Yorkshire; and Mr. Barclay, Paisley. Pigeons: Mr. J. Armstrong, Carlisle; Mr. H. Beldon. Canaries: Mr. G. Grant; and Mr. A. Mitchell, Paisley.

ALSTON POULTRY SHOW.

THIS Show was held in the Town Hall, Alston, on Thursday, the 24th of December. The following is the prize list:—

GAME (Black-breasted and other Reds).—First, W. Walton, Cocklake. Second, J. Stephenson, Nenthead. Commended, T. Brown; W. Liverick, Nenthead. Chickens.—First, J. Walton, Annatwalls. Second, W. Snowden, Kellah. Commended, J. Stephenson.

GAME (Any other variety).—First and Second, T. Brown. Chickens.—First, W. Walton. Second, T. Brown.

DORRINGS (White).—First, J. Hilton, Blaghill. Second, J. Lowe, Alston. DORRINGS (Grey).—First, Miss Wigham, Hargill House. Second, Walton & Rutherford, Green Ends.

SPANISH.—First, J. J. Kindred, Bayles. Second, R. G. Pears, Penrith. Chickens.—First, Lady Maclean. Second, R. G. Pears.

HAMBOURGS (Golden-pencilled).—First, G. Pattinson, Hayring. Second, W. Teasdale, Whitfield.

HAMBOURGS (Golden-spangled).—First, W. Ritson, Ayle. Second, T. Greenop, Kenwick.

HAMBOURGS (Silver-pencilled).—First, R. G. Pears. Second, Walton and Little, Alston.

HAMBOURGS (Silver-spangled).—First and Second, Walton & Rutherford.

COCHINS.—Prize, H. S. James, Clarghyll Hall. Chickens.—First, H. S. Gill. Second, G. Pearl, Alston.

POLISH.—First and Second, J. Chaplow, Parkhead.

GAME BANTAMS.—First and Second, F. Clementson. BANTAMS (Any other variety).—First, Mrs. Ord, Whitfield Hall. Second, F. Clementson.

DUCKS (Aylesbury).—First, J. J. Kindred, Bayles. Second, W. Lewry, Featherston.

DUCKS (Rouen).—First, R. G. Pears. Second, Mrs. Ord.

CANARIES.—Belgian.—First, R. Walton, Park. Second, J. Chaplow. Yellow and Buff.—First, R. Walton. Second, W. Kneleyside. Yellow and Buff-marked.—First, R. Walton. Second, J. Hymers. Goldfinch Mule.—First and Second, J. Thompson, Nenthead.

RABBITS.—First, Master Crawhall, Alston. Second, Master H. S. James, Clarghyll Hall.

PIGEONS.—First and Second, C. R. Saunders, Nunwick Hall.

SUNDERLAND POULTRY CLUB SHOW.

THIS was held in the Central Hall, John Street, Sunderland, on the 1st and 2nd inst. There were fifty entries in the Selling Class not inserted in the catalogue. Many good birds were shown, and altogether the Exhibition was excellent for a club show; it is in contemplation to get up a first-class show for next year. The Show was well arranged by the able Secretary, Mr. Toft, and the room was well adapted to the purpose.

GAME (Black and other Reds).—First and Second, J. French, Sunderland. Third, — Hawkins, Seaham. Commended, T. Clark, Hendon; — Robinson, Sunderland.

GAME (Duckwing and other Grey).—First, Second, and Highly Commended, T. Clark. Third, — Kay, Deptford.

GAME.—Chickens.—First and Second, J. French. Third, Highly Commended, and Commended, — Rogers, Hendon.

GAME (Any other variety).—Prize, J. French. Commended, — Laing, Sunderland.

HAMBOURGS (Gold and Silver-spangled).—First, Third, and Highly Commended, — Moore, Hetton-le-hole. Second, — Willis, Fatfield.

HAMBOURGS (Gold and Silver-pencilled).—First, Second, and Third, — Moore. Commended, — Shields, Herriorton.

POLISH.—First, Third, Highly Commended, and Commended, J. Clark, Sunderland. Second, — Moore.

SPANISH.—First and Highly Commended, — Hawkins. Second, — Bell, Sunderland. Third, — Whittaker, Sunderland. Commended, — Vaux, Sunderland.

COCHINS.—First, — Bell. Second, — Trewhitt. Third, — Robinson.

DORRINGS.—First, — Hawkins. Second, — Vaux. Third, Stobart, Coken Hall. Highly Commended, — Hymers, Birtley. Commended, — Hymers, Birtley; — Stobart.

BANTAMS.—First, — Soord, Sunderland. Second and Third, — Willis, Commended, — Crament, Sunderland.

CROSSBRED.—First, — Toft, Sunderland. Second and Third, — Hymers, Birley.

GAME (Any variety).—*Cockrels*.—First, — Hawkins. Second, T. Clark. Third, — Rogers. *Pullets*.—First, Second, and Third, J. Clark. Commended, — Black, High Pallion. *Cock*.—First, — Black. Second, J. French. Third, T. Clark. Highly Commended, — Kay. *Hens*.—First, — Kay. Second, J. French. Third, — Black.

ANY VARIETY EXCEPT GAME.—*Cock*.—First, — Stobart. Second, — Crisment. Third, — Hawkins. *Hens*.—First and Second, — Bell. Third, — Holmes, Monkwearmouth. Fourth, — Crisment. Highly Commended, — Hawkins; — Stobart; — Trewthick. Commended, — Soord.

DUCKS (Rouen).—First, — Stobart. Second, — Hawkins. Third, — Soord. Highly Commended, — Moore.

DUCKS (Aylesbury).—First, — Soord. Second and Third, — Moore. Highly Commended, C. Briggs. Commended — Rogers.

GUINEA FOWLS.—First, — Black. Second, — Service. Third, C. Briggs.

ANY OTHER VARIETY.—First and Second, — Wilcox. Third, — Black. **GAME BANTAMS (Black and other Reds).**—First, — Burdes, Sunderland Second, J. Clark.

GAME (Duckwings and other Greys).—First, — Wilson, Speanymoor. Second, J. Clark.

GAME (Piles and Whites).—First, C. Briggs. Second, — Toft.

GAME.—*Cockrel*.—First, Second, and Third, T. Clark. Highly Commended, — Burdes; — Weighill, Deptford. Commended, C. Briggs. *Pullets*.—First, T. Clark. Second and Third, — Holmes, Monkwearmouth.

SINGLE GAME COCK.—First, — Burdes, Sunderland. Second, — Toft. Third, J. Clark. *Hen*.—First, T. Clark. Second, — Burdes. Third and Highly Commended, J. Clark. Commended — Toft.

BANTAMS (Sebrights).—First, — Toft. Second, — Shields. Third, — Hymers.

BANTAMS (Rose-combs).—Second, J. Clark.

SINGLE COCK (Any variety except Game).—Second, C. Briggs.

TURKEYS.—Second, C. Briggs.

ORNAMENTAL FOWLS.—First, — Black (White Peruvian Ducks). Second, J. Clark (Pheasants).

RABBITS.—First, Second, Third, and Highly Commended, — Holmes. Commended, — Service, Sunderland.

JUDGE.—Mr. E. Hotton, Padsey.

MIDDLESBROUGH CANARY SHOW.

The Middlesbrough and North Riding of Yorkshire Ornithological Association, held its first annual Exhibition of Canaries and other cage birds, in the Town Hall, Middlesbrough, on the 1st inst. During the day there was a large attendance of visitors, and all were of opinion that considering the short time taken to organise the Exhibition (one month), it was a most decided success, both in regard to the number of the entries and the quality of the specimens shown. Some of the prize birds were very superior, and, taken as a whole, the Show was one of the very best ever held in the neighbourhood. The Association has received such substantial support, that when they issue their schedule for the next Show they intend making the prizes of about double the value of those offered at the Show just held.

BEIGIAN (Clear Yellow).—First and Very Highly Commended, W. Needler, Hull. Second and Highly Commended, R. Robinson, Middlesbrough. Third, G. Tomlinson, Stockton. Commended, J. Douglass Stanhope, Durham.

BEIGIAN (Clear Buff).—First, R. Robinson. Second and Third, W. Needler. Very Highly Commended, G. Tomlinson. Highly Commended, W. Bulmer. Commended, H. Hawman, Middlesbrough.

NORWICH (Clear Jouque).—First, G. Moore, Northampton. Second, J. Wynn. Third, C. Matthews, Harrogate. Very Highly Commended, J. Douglas. Highly Commended, J. N. Harrison, Belper. Commended, A. Millwaters, Harrogate.

NORWICH (Buff).—First, J. Wynn. Second, J. N. Harrison. Third, R. Simpson, Whitby. Very Highly Commended, G. Moore. Highly Commended, R. Hawman. Commended, J. Douglass.

NORWICH (Variegated Jouque).—First, J. Douglass. Second, G. Moore. Third, W. Bulmer, Stockton-on-Tees. Very Highly Commended, R. Hawman. Highly Commended, J. Armes. Commended, J. Wynn.

NORWICH (Variegated Buff).—First, J. Wynn. Second, R. Hawman. Third, G. Moore. Very Highly Commended, J. Douglass.

DARK OR GREY-CRESTED.—First, J. Wynn. Second and Highly Commended, J. Baines, York. Third, G. Moore. Very Highly Commended, J. Stainsby, Sunderland. Commended, J. Stephens.

CLEAR-CRESTED.—First, E. Barker, Whitby. Second, G. Moore. Third, W. Bulmer. Very Highly Commended, J. Garbutt, Broughton.

LIZARD (Golden-spangled).—First, R. Hawman. Second and Highly Commended, J. Taylor, Middlesbrough. Very Highly Commended, J. Baines. Commended, J. Greenfield, Stockton.

LIZARD (Silver-spangled).—First, J. N. Harrison. Second, T. Stansfield, Stockton. Third and Highly Commended, R. Hawman. Very Highly Commended, Master F. J. Leach. Commended, W. Burniston, Middlesbrough.

JOQUE CINNAMON.—First, R. Hawman. Second, J. Stainsby. Third, G. Moore. Highly Commended, J. Wynn.

BUFF CINNAMON.—First, W. Bulmer. Second, J. Baines. Third, J. Wynn. Very Highly Commended, J. Stainsby; J. Douglass; Commended, G. Moore.

YORKSHIRE (Clear Yellow).—First, J. Stephens. Second, R. Simpson. Third, J. Douglass. Highly Commended, W. Winter; H. Garbutt. Commended, R. Young, Harley, Northallerton.

YORKSHIRE (Clear Buff).—First, J. Armes. Second, R. Simpson. Third, R. Barker, Stokesley. Very Highly Commended, J. Stephens, Middlesbrough. Highly Commended, J. Speck, Middlesbrough. Commended, J. Bennett, North Ormesby.

YORKSHIRE (Variegated Yellow).—First, J. Stephens. Second, J. Douglass. Third, T. Whitelock. Very Highly Commended, G. Taylor. Highly Commended, J. Fryer, Stockton. Commended, E. Barker, Stokesley.

YORKSHIRE (Variegated Buff).—First, R. Hawman. Second, C. Burnis-

ton, Middlesbrough. Third, G. W. Weatherell, Broughton. Very Highly Commended, J. Stephens. Highly Commended, T. Armstrong, Broughton.

COPPY-CRESTED.—First, J. Garbutt. Second, M. Burton, Middlesbrough. Third, W. Cotton, Middlesbrough. Highly Commended, W. Bulmer.

CLEAR GREEN.—First, J. N. Harrison. Second and Third, J. Douglass. Very Highly Commended, R. Taylor. Highly Commended, T. Teuniswood.

ANY OTHER VARIETY.—First, W. Bolmer. Second, R. Hawman. Third, J. Fryer. Highly Commended, G. Tomlinson.

ANY VARIETY.—First, R. Hawman. Second, R. Buttery. Third, J. Garbutt. Very Highly Commended, T. Miles, North Aeklam. Highly Commended, J. Armes, Middlesbrough. Commended, H. Garbutt.

GOLDFINCH MULE (Buff variegated).—First, R. Hawman. Second, R. Simpson. Third and Highly Commended, J. Robinson, Middlesbrough. Very Highly Commended, F. Golden, Stockton. Commended, J. S. Spetch, Hull.

GOLDFINCH MULE.—First, W. Nichol, North Aeklam. Second, T. Walker. Third, Z. Howe, Middlesbrough. Very Highly Commended, J. Robinson. Highly Commended, H. Garbutt. Commended, J. Wynn.

GOLDFINCH.—First and Very Highly Commended, J. Fairclough. Second, J. Garbutt. Third, G. Garbutt. Highly Commended, Z. Howe. Commended, J. Taylor.

LINNET (Brown).—First, R. Taylor. Second and Third, W. Burniston. Very Highly Commended, R. Robinson. Highly Commended, W. Bulmer; J. Speck.

BRITISH BIRDS (Any other variety).—First and Very Highly Commended, C. Burniston. Second, T. Smith. Third, T. Man. Highly Commended, J. Maxwell, Middlesbrough. Commended, J. Yates.

Mr. J. Calvert, of York, officiated as Judge.

GUILDFORD POULTRY SHOW.

We published the list of the awards at this prospering Show, and we now proceed to make such remarks as the different classes seemed to call for.

This is one of the many shows that are held at this time in conjunction with those of fat stock, roots, and agricultural implements. The connection seems natural, and, so far as we have been able to observe, the union is a happy one. Conviction and confidence are both plants of slow growth, and it has taken many years for these to gain a hold of the minds of those who should have been the first to see that in poultry-keeping there was profit for all, but more for them than for anyone else, because they had half the means and appliances gratis. But poultry shows are taking root. Proof: Formerly a small space in the Rifle Hall was sufficient for the poultry, but this year it had outgrown its place, and attained to the dignity of a separate locality. It was held in the Green Market, and filled it thoroughly.

Surry some years since was the home of the *Dorking* fowl, as the name implies, but the good people of the county seemed careless of the distinction, or of the many hundreds of thousands of pounds so produced, and the majority of the Surry fowls now come from Sussex. We may here observe that the contempt of that which is found with little trouble applies to poultry as fully and as truly as it does to climate or the fertility of the earth. Thus the Surry fowls have gone to Sussex, the Norfolk Turkeys to Cambridge, and the Aylesbury Ducks are spreading to Oxfordshire, difference of soil and absence of natural advantages being counterbalanced by extreme care and painstaking. To resume: At this Show Surry vindicated her claim to be the home of the *Dorking* fowl. The class was excellent and numerous. The prize Grey and White birds were as good as we have ever seen, and might have figured successfully at Birmingham or Liverpool. It is difficult at small shows, but we always think White and Coloured *Dorkings* should have separate classes. There were here most excellent specimens of the Cuckoos.

The *Spanish* were far above the average. Some of the best birds were sadly out of condition. *Brahmas* showed well. The hens in the prize pens were as good as we ever saw. In some of the unsuccessful, instead of being white they were almost blue from the shade of under black feathers, or from mixture of coloured with the white. This is now becoming an important class, and great competition makes care and judgment necessary in selecting competing pens. There were very meritorious Dark birds, but not equal to the Light. There were excellent *Game* fowls, and a greater number of Black pens than we are in the habit of seeing even at larger shows. They cannot, however, compete with the Black or Brown Reds with any hope of success. *Cochins* are always badly represented in Surry, and the Guildford Show was no exception. They were poor in numbers and quality. *Bantams* showed well in their class, but the Black Red Game were superior to any others. The Duckwings were good, but the Sebrights indifferent. Other varieties of fowls were well represented, especially the French breeds. The *Crève-Coeurs* and *Houdans* were very good. These breeds are making way, but *La Fleche* are deservedly discouraged. There was an excellent show of Aylesbury and Rouen Ducks; both in numbers and quality the former were the heavier. The Turkeys were very good.

Mr. Bailey acted as Judge.

NATIONAL PENISTERONIC SOCIETY'S SHOW.—This takes place at the Crystal Palace on the 12th inst., and probably will be the best Pigeon Show ever seen, comprising upwards of eight hundred birds of all varieties from the best breeders and fanciers in

all parts of the kingdom—Manchester, Yorkshire, Plymouth, Lincolnshire, Kent, Hampshire, Isle of Wight, London, &c.

MANCHESTER POULTRY SHOW.

It is now eight years since these annual exhibitions at Belle Vue Gardens were first instituted by the spirited proprietors, the Messrs. Jennison, and although at first many persons foretold that non-success would as certainly be their fate as it had been in the case of all similar attempts at Manchester, the result has been quite the reverse of these anticipations. It would be difficult to point out any of our poultry meetings more popular than those annually held at the Manchester Zoological Gardens. No doubt one of the principal causes of success has been the unvarying determination of the Messrs. Jennison to keep good faith with the public at all hazards, and without allowing the slightest breach of rules. All payments are made with a punctuality the more to be appreciated when contrasted with the arrangements of many other committees. Again, the proprietors of Belle Vue never hand over to subordinates any supervision of their Show, but keep it all in their own hands, whilst each person employed diligently fulfils the duties specially allotted him. From this wise division of labour everything is not only done well but with promptitude, and the greatest advantages result, for the evil of many shows is entirely avoided—viz., the shifting of particular duties from one member of a committee to another, till not infrequently the arrangements are not carried out at all, or at best but very inefficiently. Difficulties are inevitable where poultry committees neglect to adopt a well-matured plan of operations, and these gentlemen who have so frequently experienced the troubles that are constantly occurring at poultry shows, would act wisely to imitate closely the plans adopted by Messrs. Jennison, and like them enforce to the very letter the rules laid down, without the slightest distinction to purse or person.

This year's Show was singularly well filled, more than one thousand pens of poultry competing, and we can with confidence say, the almost uniform quality of the birds exhibited was infinitely superior to that found at the generality of shows. The *Dorking* classes were such as are very rarely equalled, and many of the birds were in the highest possible condition, never having been previously exhibited. *Spanish* fowls were good, but the cock classes were not, perhaps, quite so perfect as have been seen at former shows, many noted exhibitors retaining their best specimens for the Bristol Show. The pullets and hens, however, were remarkably good. All the *Cochins* were of superior quality, and the first-prize Buff pullets were gems. The *Brahmas* were large and wonderfully improved, and no doubt the light-feathered are fast pushing into public favour, most strenuous efforts being now made by breeders of this variety of fowls to insure their popularity. All varieties of *Polish* fowls were shown in great perfection, and we feel perfectly assured that these useful and ornamental breeds will again become, on their own merits, as popular as they were twelve or fifteen years back, when, from the paucity of entries, many committees positively expunged them from their prize schedules rather than give them the continued support they so well deserved. The *Game* classes abounded in the best of birds, and we heard a noted breeder of these fowls state, after the opening of the Show, "There were six or seven Brown Reds in one class that no man living could tell which was best, except as to condition." After the most careful inspection this proved to be the case to a far greater extent than we anticipated. Messrs. Challoner and Wood exhibited *Game* fowls in the most unexceptionable condition. The *Game Bantams* were excellent, Mr. Crosland showing a splendid specimen. Of *Water Fowls*, whether the useful or the strictly ornamental, the show was excellent. Messrs. Jennison exhibited among Ornamental Water Fowl some of the most beautiful breeds of the rarest description, which caused this portion of the Show to be singularly attractive. *French* fowls were numerous, and in quality were great improvements on those formerly exhibited.

Pigeons were a most important and successful portion of the Exhibition, and a class expressly for Doves was worthy of the general admiration it received. At the conclusion of the Show the birds were speedily forwarded homewards in excellent health and condition. The Show was throughout remarkably well attended.

We published a list of the awards last week.

BIRMINGHAM COLUMBARIAN SOCIETY'S FOURTH SHOW.

(From a Correspondent.)

THIS Show was held on the 31st of December at the Odd Fellows Hall, Birmingham. Three of the classes in the catalogue—namely, Pouters, Antwerps, and "Any other variety," were represented by specimens of very great merit. In the last two I may say, without exception, that no public show has yet proved such a treat. The members, being thorough fanciers and not gain-seekers, do not desire to send their specimens to public shows of a duration which imperils the safety of the birds in many ways.

The catalogue comprised two divisions, the first being set apart for young single birds bred by the exhibitor during the year, and the

second for birds above one year old. In Class 1, Carriers, Mr. Hallam carried off all three prizes. In Class 2, Pouters, Mr. Stewart gained the first and second prizes. In Class 3, Almonds, Mr. Hallam took all three prizes. Class 4, Mottles and Roseings.—In this Mr. Careless took the first and second prizes. Class 5 was for Trumpeters: here Mr. Taylor obtained all three prizes. Class 6, Jacobines.—Mr. Allsop was first and second. Class 7, Fantails.—Mr. Stewart was awarded the first and second prizes. In Class 8, Barbs, Mr. Hallam was first and third, Mr. Allsop second. Class 9, Dragons.—In this Mr. Allsop was first, and Mr. Ludlow second. Class 10, Antwerps.—In the opinion of nearly all the exhibitors, including the prizetakers, this was not correctly judged. Mr. T. Marlow was first, Mr. Ludlow second, Mr. J. Bradley third. This was a splendid class of birds, with remarkable colour and carriage. In Class 11, "Any other variety," Mr. Noyé was first with a beautiful specimen of the Satinette breed, which was also honoured with the extra prize offered by the President of the Society for the best young bird in the show. The same exhibitor took the second prize with a Brunette of the most delicate plumage.

In the second division there were nineteen entries. In Class 1, Carrier cocks, Mr. Taylor was first, Mr. Hallam second. Class 2, Carrier hens.—Mr. Hallam was first, Mr. Ludlow second, and Mr. Allsop third. In Class 3, Pouter cocks, Mr. Stewart gained the first prize with a very superior bird, which I believe to be the same specimen styled the "King of the Blues." To this bird was also awarded an extra prize offered by Mr. Noyé for the best specimen among the single birds. Mr. Stewart also carried off the second and third prizes. Class 4 was for Pouter hens, and in this Mr. Stewart again took all three prizes. Class 5, Almond and Short-faced Tumblers.—In this Mr. Hallam was first. In Class 6, Fantails, Mr. Stewart was first. Class 7, Mottles and Roseings.—Mr. Careless took all three prizes. Class 8, Saddles.—In this Mr. Careless again carried off all three prizes. Class 9, Badges.—Mr. Gordon took the three prizes. Class 10, Jacobines.—Mr. Stewart was first, Mr. Allsop second. In Class 11, Barbs, Mr. Allsop obtained all three prizes. In Class 12, Dragons, Blue, Mr. Ludlow was first and second. Class 13 was for Dragons, any other colour, Mr. Allsop being first, Mr. Ludlow second. Class 14, Antwerps, Blue and Dun.—In this Mr. Marlow was first and second; he also obtained the extra prize offered by Mr. Ludlow for the best pair of Antwerps. Mr. Bradley was third, and Mr. Noyé extra third. In Class 15, Antwerps, Blue Chequered and Dun Chequered, Mr. Bradley was first, Mr. Noyé second. Class 16, "Any other variety in pairs."—In this Mr. Noyé was first with a beautifully pencilled pair of Satinettes perfect in every point; Mr. Stewart being second with Satin Fairies, Mr. Taylor third. Class 17, Antwerp cocks.—Mr. Bradley was first and third, Mr. Allsop second. This was an excellent and strong class, but, as I have remarked, badly judged, the best birds being overlooked; they were exhibited by Mr. Marlow and Mr. Ludlow. Class 18, "Any other variety," single birds.—Mr. Noyé again, with an irresistible Satinette, took the first prize and the second with a Brunette; Mr. Allsop was third with a Barb. In Class 19, Long-muffed Tumblers, Mr. Careless was first and second.

On the whole the Show, numbering about 165 pens, was a great credit to the members of this Society, and afforded much enjoyment to the large number of visitors, who were admitted free by presenting a special card, or their own cards.

THE LIMIT OF BEE PASTURAGE.

I DISSENT entirely from the views of Jasper Hazen, as presented in an article copied from the "Bee Journal." My views are founded not on theory alone, but on actual experiment, years in succession. Mr. Hazen will do well to try his new hives more than two years before he asserts that all that is required "to secure 1500 lbs. of surplus, is to put bees into twelve of his hives." To any experienced bee-keeper this assertion has "axe-grinding" printed too legibly upon it! We all know that bees enough may be put into any large hive or bee palace to secure a great amount of honey for one season, but after that, when the offspring of only one queen is to be depended on, the extra size of the hive is an injury rather than a benefit. I knew an instance where four swarms of bees were put into a small room fitted up in an attic, and the first season 550 lbs. were taken from the room and abundance left for winter use. The next season 60 lbs. were taken. Two seasons followed when the bees merely lived, no new comb being built, and the winter following the bees died. If at the end of the first season the conclusion had been drawn that this was the way to secure great yields of surplus, how great would have been the mistake!

I have made many experiments with various forms and sizes of hives, and am fully persuaded that the right size and shape are from 2200 square inches in a form not far from square. If hives are made larger than this, not 1 inch more room is occupied for brood, and yet they will swarm just as soon if allowed to do it. I have placed under twenty Langstroth hives other hives well filled with comb in May, thus giving them 4400 inches, and though the colonies thus treated were

very strong, not an egg was deposited in the lower combs. Neither did the double hive act as a preventive of swarming, for hives so treated were ready for swarming just about the same time as single ones. No number of boxes on the top will prevent swarming, as many know who have seen bees migrate from hives in which they had six, eight, and even sixteen boxes filled partially with honey.

Again, before bee-keepers can "measure the limits of their fields in order to limit the number of their colonies," as Mr. Hazen proposes, there must be some definite arrangement made with the "clerk of the weather," to have all seasons uniform; then we can have a solid basis on which to form our calculations.

Last season (1867), was very poor, and if I had "formed my basis" about July 10th I should have said forty or fifty colonies were my limit; but at the same date this year 150 were uniformly storing in boxes, and I have no doubt five hundred would be if I had them in good condition. My advice to bee-keepers is to study less the capacity of their fields, and more how to have every colony strong and in good working order from April to October, especially how to have them strong in spring, for I unhesitatingly lay down two propositions and challenge proof that they are not true.

1st. Hives containing from 2000 to 2400 inches are as large as any one queen will keep stocked with bees.

2nd. No section of the West was ever overstocked with good strong colonies in hives of this size.

Let us hear from some one who had not too many hives half filled, but too many good strong colonies in May!

Here is a colony storing honey in eight boxes; another by its side with sixteen, half full; another, still, is barely supporting itself and rearing a little brood! What makes the difference? Is the weak one suffering from scanty pasturage? or shall we put it into one of Mr. Hazen's hives and secure "lots of surplus?" Do we not all see that while the first two colonies send out early and late myriads of workers, the third has but a handful of bees to gather its supplies? If the harvest of honey continues long enough it may be strong in a month or two, but too late for this season. In order to prove that bees have reached the "limit of their field," we must show hives all strong in numbers and all failing to gather supplies.—E. S. T. (in *Prairie Farmer*.)

FEEDING BEES—PROTECTING HIVES.

SOME of my hives being very light I was anxious to supply them with food according to your directions in the "Gardener's Almanack" for 1868, where (in the month of February), you give the quantities of lump sugar and water to be supplied by means of an inverted bottle. I had the food made according to your directions, but found it ran out of the bottle though I tied double muslin over the mouth, whereas you only spoke of cap-net. I then tried a greater proportion of sugar, which had only the effect of candying the food, for the part that still remained uncandied ran out of the bottle as quickly as before. Please say what I should do, as I fear my bees are in want of food.

I find it very difficult to protect my straw hives that are on stands, during this very wet weather. I have covered them with straw covers, and then put an inverted milk-pan over them, but still find them wet or damp. Say if I ought to do more to cover them.—L. RIALI.

[We can only surmise that your bottle-mouth is too wide, as we use coarse net of an eighth of an inch mesh, and prefer it to any finer fabric. Test the bottle with pure water, and if, when tied over with cap-net and inverted, its contents do not after the first rush remain perfectly suspended there is something wrong, which must be remedied without having recourse either to the substitution of muslin for cap-net, or to thickening the fluid by the addition of sugar. Your straw covers should at all events be rendered water-tight, a task which any ordinary thatcher will find no difficulty in accomplishing.]

WAXEN SHEETS.

"A LANARKSHIRE BEE-KEEPER'S" last letter in vindication of the impressed sheet system as against the plain, resolves itself into two assertions: 1st, That plain sheets are good for nothing, and that in my observations which proved the contrary, I have been deceived in some mysterious way only

known to himself. To this I can only reply: Try it, bee-keepers; try the sheets side by side as I did, and let us know the result. 2nd, He asserts that wax sheets weigh sixteen to the pound instead of, as I say, thirty, the words by which I qualified the statement, "when trimmed for Woodbury frames," being omitted. In reply to this, I may refer to the note which you have appended to his letter, to the effect that Neighbour's sheets weigh twenty-three to the pound; you might have added, "in their rough state." Now, when these sheets have their corners rounded off till they become nearly semicircular, as is advisable for several reasons which I need not enter upon, and when the unstamped margin is removed, they will be found to run even more than thirty to the pound. If the price of wax has risen lately, the expense of the sheets will of course be proportionately increased. I have not had occasion to buy any for some time, but I have not heard of any of my neighbours obtaining more than 2s. a-pound this season.

To sum up the controversy in a few words. Impressed sheets are an excellent invention, but plain are quite as good and vastly cheaper.—APICOLA.

AMERICAN SCRAPS.

WHEN the wind is east and Turkeys gobble,
It is no time a horse to hobble;
But let him range to catch the breeze—
Should he be troubled with the heaves.

An ox with broad horns and short glossy hair,
Is good for the team, the market, or fair.

One white foot is bad, and two are too many,
That horse is best that does not have any.

A farmer without hogs,
But an army of dogs,
Will have more puppies than pork;
For the swill will be lost,
To the husbandman's cost.
Dogs good for nothing to work.

The slackest farmer, strange to say,
Is known for being out of hay.

When chickens roost above the mow,
It spoils the hay for horse or cow.

Pork and Beans make muscles strong—
Something farmers seek;
It is a dish to make life long,
When cooked but once a-week.

OUR LETTER BOX.

COCHIN-CHINA FOWLS (*A Novice*).—Cocks will crow at night without being disturbed. There is a superstition that they always crow at midnight to remind people to watch and pray. Cochin pullets, being moderately but well fed, should lay at six months old at the latest.

LA FLÛCHE AND CRÈVE-CŒURS AS LAYERS (*W. W.*).—La Flèche lay rather a larger egg than the Crève-Cœur, but they are not healthy or hardy fowls. We know hardly any one who once kept them and still does so. They are well and dead in a day, and therefore although they lay larger eggs than the Crève-Cœur, the latter at the end of the year will be found the better layers.

DISQUALIFYING BIRDS (*W. H.*).—We are of opinion that the Committee in all cases can withhold prizes, though awarded by the Judges, if it is found that the birds were disqualified, as they were in the case you mention.

DUCKS' EGGS (*J. Crick*).—Whether the eggs laid after a fortnight's separation from the drake will prove fertile is uncertain. Why you should put a Rouen drake with Aylesbury Ducks after killing the previous drake because he was not a true Aylesbury, seems incomprehensible.

POULTRY MARKET.—JANUARY 6.

It has been almost impossible to give any report of the market of late. The supply has been a continual glut, the heat of the weather has made sales almost impossible, and there has been constant grumbling on all sides. Nothing sold but a few very choice lots, and they realised prices that made the average appear unsatisfactory.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	3	6	4	0	Pheasants	2	6	3	0
Smaller do.	3	0	3	6	Partridges	1	6	1	9
Chickens	2	0	2	6	Hares	3	0	3	6
Geese	7	6	8	0	Rabbits.....	1	4	1	5
Ducks	2	0	2	6	Wild do.....	0	9	0	10
Pigeons	0	9	0	10	Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 14—20, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
14	Th	Oxford Lent Term begins.	41.9	29.5	35.7	19	2	af 8	16	af 4	53	af 8	12	af 6	2	9	27	14
15	F		41.4	28.5	34.9	13	2	8	18	4	23	9	14	7	3	9	48	15
16	S		41.8	30.7	36.2	20	1	8	19	4	49	9	18	8	4	10	9	16
17	SUN	2 SUNDAY AFTER EPIPHANY.	42.5	30.5	36.5	14	0	8	21	4	12	10	22	9	5	10	29	17
18	M	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	42.7	31.1	36.9	17	59	7	22	4	33	10	25	10	6	10	48	18
19	Tu		41.6	29.6	35.6	16	58	7	24	4	54	10	39	11	7	11	7	19
20	W		41.3	29.1	35.2	14	57	7	26	4	16	11	morn.	8	11	24	20	

From observations taken near London during the last forty-two years, the average day temperature of the week is 41.9°; and its night temperature 29.9°. The greatest heat was 68°, on the 19th, 1828; and the lowest cold 4½° below zero, on the 19th, 1838. The greatest fall of rain was 0.88 inch.

GROWING ORANGES FOR DESSERT.



ORANGES will be grown largely in this country for their fruit. I once laughed at the idea of Orange trees being grown for their fruit in England when these could be bought in the streets at one penny, or even a halfpenny each. At that time I did not know how superior a well-grown Orange was to one imported, nor did I take several other things into consideration.

In the first place, Oranges grow well under the shade of Vines; and secondly, what a strong partiality most persons show for the Orange tree. Whether the fine evergreen foliage, the deliciously-scented flower, or the golden fruit is the chief attraction, or the romance and poetry that attach to the Orange, I do not know, but certainly almost all persons who have glass desire to grow an Orange tree.

The principal enemy of the Orange tribe is the scale insect, but I have proved that a single dip into a solution of Fowler's Insecticide will kill almost every scale; so that enemy is no longer to be feared.

A large double-roofed house, 100 by 30 feet, filled with Oranges, Lemons, Citrons, Limes, &c., in all their variety, and covered with Vines in full bearing, would be a grand sight.

Oranges will grow well without bottom heat, but they grow much better with it. Heated beds for the Oranges, with a contrivance for keeping the Vines cool during winter, would be perfection. Brick beds covered with slates, under which two 4-inch hot-water pipes were placed, would provide the bottom heat; and the Vines might easily be taken out of the house, and laid at length in a narrow cold frame at the side of the building. During the winter such a house would be full of fine evergreen foliage, beautiful fruit, and fragrant flowers; whilst in summer, to add to the beauty, there would be the Vine-covered roof. What house could be more enjoyable?—J. R. PEARSON, *Chilwell*.

[After what we have seen effected in the cultivation of Oranges by ordinary care, we do not hesitate to say that ere long we shall find them as commonly grown as Vines and Cucumbers now are.—EDS. J. OF H.]

SPRING FLOWERS.

I AM delighted to see Mr. Pearson's notes on spring flowers at Belvoir and elsewhere, and I am pleased to read his favourable mention of one of my great favourites, *Doronicum caucasicum*. This plant is so tidy in its growth, and so profuse, gay, and protracted in its manner and time of inflorescence, that I would envy any garden without it. I never tried a bed of it, but I am sure the effect would be magnificent. Studded here and there in a mixed herbaceous border, I do not know its equal.

Its congeners, *D. plantagineum* and *pardalianches* are to my mind very ornamental in a shrubbery border; they will

No. 407.—VOL. XVI., NEW SERIES

grow where scarcely anything else thrives, and increase with great rapidity.

Pulmonaria alba is another most lovely plant which everyone ought to grow. It completely smothers itself with bloom for some weeks, and its spotted leaves are almost as pretty as the flowers. Its various blue, red, and purple congeners are by no means to be despised.

I have for several years past had a bed of *Dodecatheon meadia elegans*, and it has been the admiration of all who have seen it.

Dodecatheon Jeffreyanum is a very handsome and striking plant. As I was fortunate enough to secure well-ripened seed last summer from my single specimen, I hope yet to try the effect of a bed of this species also.

Why does not everyone grow *Primula cortusoides*? It is raised with the greatest ease from seed, which it ripens freely, and in a sheltered spot makes a lovely spring bed. In the autumn of 1867 I surrounded a small bed of this little gem with a border of *Saxifraga cymbalaria*, and put in at each corner a plant of a large, deep orange, single *Polyanthus*, and I shall not easily forget the pleasure it gave me in May, though the hot dry weather sadly spoiled the effect.

How few people know or grow *Waldsteinia geoides*! but who, if they once had it, would wish to part with it? It looks like a little tuft of bright yellow *Hepatica*. I leave my readers to imagine what that must be.

Who can tire of admiring that most lovely *Iris*, *I. graminifolia*, or its quaint and curious relative *Iris tuberosa*, with its black and green flowers, recalling to the winter sojourner in Rome many a pleasant stroll in the Villa Doria, and delightful excursion to Genzano and the wooded banks of the Lake of Nemi? And whilst lingering amidst the beauties of the Italian flora, let me recommend to every lover of spring and winter gardening two lovely little plants, which seem to thrive as well in my somewhat cold and chilly soil as on the sunny slopes of Nice or the warm banks of the Campagna. I am sure no one will regret to be reminded of the flower-vendors of the Corso, and the fair faces and floral fights which decked it with beauty and filled it with fun during the pleasant week of the Carnival, by seeing the little golden stars of the "*Primo Fiore*," *Calendula officinalis*, bespangling a sheltered nook in his garden during the gloomy months of November and December; and when a bright little patch of *Erodium romanum* meets his eye some sunny morning in May, it will recall no unpleasant reminiscences of the lovely little tufts of pink and green which studded the banks as he rode or drove along the Appian Way to the meet of the Roman fox hounds at the tomb of *Cæcilia Metella*.

I might go on to talk of the exquisitely beautiful white variety of *Anemone ranunculoides*, which every visitor to Hadrian's Villa at Tivoli will remember, and the blue spikes of *Scilla bifolia*, which enlivened the corn fields on the route thither from Rome; or the bunches of white and shining stars with which that pretty little pigmy *Ornithogalum nanum* (?) bestrewed every Campagnan meadow. But I shall get wearisome, and will only speak of the delight it has given me to find that these denizens of the

No. 1059.—VOL. XLI., OLD SERIES.

sunny south do not object to unfold their beauties in the chillier atmosphere and less genial soil of a Buckinghamshire garden.—H. HARPUR CREWE, *The Rectory, Drayton-Beauchamp.*

WINTER MANAGEMENT OF PELARGONIUMS.

HAVING in my last article on Variegated and Zonal Pelargoniums, page 355 of previous volume, promised to add a few further remarks on the winter management of Pelargoniums, I now fulfil my promise.

I begin by stating what I think will hardly be controverted, that when the summer display in a flower garden is made to depend chiefly, or, as in some places, entirely, on bedding plants, the great object we have to achieve is to make those plants flower as early as possible, and continue in bloom as long as possible. Now, amongst bedding plants it will be, I think, readily admitted by all that Pelargoniums of the Zonal section (including under that head all Pelargoniums that are used for bedding purposes), occupy the premier rank, are more universally used, more easily managed, and, taking one season with another, are the most enduring of all our bedding plants. I use the word enduring advisedly in a twofold sense—namely, that of not only lasting longer, but also of bearing worse treatment, and, I am sorry to add, have to undergo worse usage at the hands of the gardening fraternity, than any other plants, unless I except a few of the choicer Variegated and Tricolor section, which at present are looked upon rather as pets, and, moreover, rebel against the ordinary treatment which the poor Tom Thumbs, Stellas, &c., have to suffer, by pining away and becoming less by degrees, and beautifully less, or, perhaps, I ought to say dismally less. What I complain of is, that too many gardeners recommend as a system for bedding Pelargoniums during the winter what is at the best but a makeshift plan—viz., putting them as cuttings into pans or boxes at only 1 inch apart, stuffing them close together into a cold frame from which frost is barely excluded, allowing them no water, and consequently no growth, for fear of damp, and when they have struggled through the winter in this way many of them are not even potted-off when the longer days of spring have come, but are turned straight out of the pans or boxes in which they were wintered, into the flower garden. What is the result? For the first month or six weeks there are no blooms—it is a mere struggle for existence; if a dry and hot summer like our last comes, many of them die altogether; if a wet one, they are more likely to live, but are longer in coming into bloom. Then, again, with this system, no sooner does August come than the work of destruction has to recommence, at least as far as the Variegated Pelargoniums are concerned, in taking cuttings; and a little later all the commoner sorts also have to be cut over, so that no sooner are the beds covered, and, perhaps, for the first time in good bloom, than the ruthless knife has to begin its work, for unless the cuttings are taken early and struck in the pans and boxes before they are put into pits and frames, very few will survive the winter.

The system I would advocate is certainly not so cheap a plan, but I do not believe in very cheap makeshifts; they are never in the end satisfactory; but it has its advantage in making a bedded-out garden gay as soon as ever the plants are put out, and in keeping up the display longer.

To begin with, I would never take any cuttings till it were time to take up the old plants altogether. These old plants ought to be well cut-in, and then potted-off separately into 5 or 6-inch pots, according to size, and put into hotbeds, or frames heated with hot water or flues, till they make fresh roots and young shoots. The tops that are cut off are used for cuttings, putting six into a 4-inch pot, and placing them on shelves in a warm greenhouse or vinery as near the light as possible, proper attention being paid to their being watered and syringed when required. If the house faces south, so as to catch the sun, and a proper temperature is kept up in dull days, few of the cuttings will fail to strike. These cuttings should be kept constantly growing, and their tops pinched-in if they are inclined to draw up, and as soon as the new year is turned they are ready for potting-off. They should not have less than 4-inch pots. When potted they ought to be placed on stages in a warm greenhouse, still as near the light as possible, the temperature of the house not being allowed to fall below 40° at night. Care should be taken to keep them constantly watered, and pinched-in to make the plants bushy, but they must not be pinched back after April has begun. With this treatment their blooming shoots will be formed, and

many of them will be in good flower, by the middle of May. Many persons will think these plants would be more tender, but I have found them stand frost in May as well as, if not better than those turned out of pits, and as their roots will be in a healthy growing state, they at once take hold of the ground and require no watering after they are put out. I never harden-off Pelargonium plants that are turned out of houses. When there is plenty of sun and air they do not really require much hardening, for the direct rays of the sun and cold winds injure plants that have been turned out of cutting pans far more than they do plants out of single pots, even though those in the pans may have been turned out to harden. Too often hardening-off means merely drying up the plants and killing the young roots, and in bedding-out we must remember that the roots are the important part to look to more than the tops.

The older plants, which were taken up, may, when they have made fresh roots and young wood, gradually have more air and a colder treatment, and then be kept either in late vineries or pits, provided there is the means of heating the pits either with hot-water pipes or flues; but the great secret of success is never to let the young roots die again from want of water. Warmth, with water, is better than cold without it; in fact, more plants, especially Verbenas, Calceolarias, and Lobelias, suffer during winter from want of water at the roots than from any other source. I remember, two years ago, at a friend's house, seeing some large plants of Calceolaria Aurea floribunda, on some shelves in a vinery, close to the glass where the sun came on the roots, and the gardener told me in a melancholy voice, that he was afraid he was going to lose them all, as they kept damping-off. Sure enough they were drooping, and their leaves flagging, but the soil as dry as dust. I asked him why he did not water them, and he said that he did not like watering them in winter, for he thought it would make them damp off more. I recommended him to stand some in a tub of water all night and then see whether they would damp-off, and he was surprised to see them fresh and green in the morning.

It is the same again with Verbenas, only if once they are allowed to become dry they are more difficult to bring round, as if the roots once dry so much as to lose their young spongioles, watering afterwards is too late, and the plant gradually dies away, unless it is put into a warm moist heat without much water at the roots. I have often seen Verbenas killed in winter in this way from want of regular watering; and the gardener, perhaps, will say, "It cannot be from want of water, for see how wet the pot is, it must have damped-off;" whereas the true reason is, as soon as the spongioles of the roots are killed the roots can take no water till fresh spongioles are formed, and every time the plant is watered it becomes worse. This, which is a great evil with Calceolarias and Verbenas, and many other plants, especially Cinerarias, is also an evil, though, perhaps, a minor one in the case of Pelargoniums, because they are better able to live without roots and to make fresh spongioles; but it ought to be borne in mind, that whenever a plant of Pelargonium during the winter becomes dust dry, its young fibrous roots are killed, and the plan of watering only occasionally, when the surface of the soil is dusty, is radically wrong, because the roots are constantly being killed and formed again. I have turned plants out of pots at bedding-out time from a top shelf in the conservatory where it was difficult to water them, and where they were consequently neglected, and they had not a bit more root, or more hold of the soil than when they were put in in October.

The plan I advocate of warmth and moisture in order to enable gardeners to have plants more forward at bedding-out time, and to prevent the necessity of cutting them to pieces in August and September, cannot, of course, be adopted without proportionate expense, and the houses must be light and airy. But here I would say a word to owners of large establishments. Why, when the pleasure of a flower garden so much depends on its summer beauty, why not have a certain number of houses especially devoted to the culture of bedding plants? The same houses will come in most usefully, after the bedding-out is finished, for many other purposes, as for Vines in pots, or specimen plants for the greenhouse and conservatory, and preparing plants for their winter decoration. Many noblemen and gentlemen reduce their gardeners to makeshifts for their bedding plants, and grudge fuel and expense, but do not mind what expense they are put to for succession vineries, Peach houses, pineries, &c. Others, again, will spend money on ornamental-foliaged plants in stoves, or Orchids, or tender plants, that live in so hot an atmosphere that no ladies

can stay for many minutes in it to admire them, and yet grudge expense on the denizens of the flower garden, of which nearly all ladies are enthusiastic admirers.

A few words more and I have done. One good plant is worth a dozen bad ones. Too many gardeners fail from counting-up their bedding plants by the thousands, and think it a fine boast if they can say they have bedded out 10,000 Pelargoniums. Much better effect can be produced by the judicious management of a few good plants, than by treble the number of inferior. The last summer—that of 1863—should be a lesson to all gardeners. I never saw a single bad or weakly plant do any good, and, on the other hand, wherever the Pelargoniums and other plants were turned out in good health, I never saw them do better. This should, consequently, be always borne in mind by all gardeners, that quality is better than quantity.—C. P. PEACH.

GRAPES AT NUNEHAM PARK.

HAVING here a large collection of the different varieties of Grapes, and growing some of them under very different circumstances, I think some of your readers may derive a little advantage from my relating my experience and the different temperatures the Vines are grown in.

The Trentham Black I have growing in a Muscat house, and nothing can be more satisfactory; it is also growing in a Black Hamburgh house, and is there giving equal satisfaction, setting very freely. Here I must remark that the temperature in a Black Hamburgh house in the afternoons often rises with sun heat to 95°; but fire heat is very little used when sufficient sun heat can be obtained, the fire heat never exceeding 70°, and being very seldom so high. In the after part of the day the house is copiously supplied with water, as for years I have given up the old-fashioned plan of keeping the house as dry as dust for three weeks or a month when the Vines are in flower. I never use a syringe at any season after the Vines have broken, and yet I have no difficulty in keeping down red spider. The third and last place in which I have Trentham Black is in the front of a Peach house, and I was induced to put it in such a situation from reading in this Journal how well it did in a ground vinery; but however well it did in the ground vinery, it is a complete failure with me, as but few berries set.

The Muscat Hamburgh I grow, and generally grow well, along with Muscats and other Grapes that require a high temperature. I even grow it along with Black Hamburghs, by looking carefully after the bunches when in flower, going over them every day with the hand, and giving them a good shaking; but no such attention is required when they are grown along with Muscats and Barbarossa [Gros Guillaume]. In my opinion this Grape cannot be surpassed for flavour; but it has one great fault—namely, that it requires cutting within a month after it is ripe, otherwise it becomes dried up, and is no credit to the gardener when sent to table, though losing none of its richness.

With regard to the Black Hamburgh, every one knows what to do with it. The Alicante and Lady Downe's require the same treatment as the Muscats. Lady Downe's is a very shy breaker if not well handled in the autumn; but if the wood was well ripened in the previous year there will be no lack of bunches, as they are shown very freely.

The Buckland Sweetwater is really a first-class Grape when well managed, growing well either with Hamburghs or Muscats, but setting more freely when grown along with the former than with the latter, the temperature being too high, and causing the flowers to become black and drop.

Many more of the older varieties are grown here, but much the same treatment is adopted for them as for those previously mentioned. The newer kinds are growing well with me, but having no experience of their qualities I leave them till some future occasion, when they shall have their good or bad qualities recorded.

I have seen lately many inquiries about planting Vines after they have been fruited in pots. I will, therefore, record my experience on this subject. For my own part, if I had strong fruited pot Vines I should always do so, because I should then know what to do with them.

Three years ago last autumn I planted out four Vines in the front of two Peach houses, each of these being 63 feet long. The Vines were trained with one red to the right and another to the left, and by the end of the following summer they had extended the whole length of the houses, making a little more

than 30 feet of growth, and bearing eight bunches each. In the following year, 1867, they each brought to perfection twenty-four bunches, and last year forty each. The sort is Dutch Sweetwater.

In the year after the Vines were planted I had to supply a gentleman with six Vines for a new vinery; and as he had frequently had an opportunity of seeing how well the Vines that I planted out of doors were doing, nothing would satisfy him but old pot Vines for planting. Much against my will, he planted five Vines out of pots, and one strong Vine fit for planting, being only one year old. The result has been as follows: The pot Vines made from 3 to 5 feet of growth, the young Vine about 23 feet, and then it was stopped, and at the present time it will take two years before the others will have as good canes.

I have no doubt many, when they read this, will ask, What was the cause of all this difference? The answer is plain. The one grower had the experience, and the other had to be told what to do, which is next to impossible; a doctor might just as well prescribe for a patient whom he had seen taken ill, but had not seen for months afterwards.

I intended to have stated my experience on the extension system, but must leave that for a future number.—JAMES STEWART, *Nuneham Park*.

AURICULAS AT KENSINGTON.

I HAVE only just received the schedule of the Royal Horticultural Society, and as a lover of the Auricula I naturally glanced at it to see what had been done for this favourite flower: and I venture to say that never since Auriculas were first shown has so preposterous an arrangement been made. I last year wrote about the time fixed, and this year an improvement has certainly been made by offering prizes at both the spring Shows; but who, in the name of Flora, could have been the suggester of the notion of dividing the classes as they are divided here?—nine Auriculas edged, and nine Auriculas self and fancies; to say nothing of the stinted way in which the prizes are offered. While prizes are accorded for Hyacinths, Crocuses, Tulips, Roses, Azaleas, &c., to both nurserymen and amateurs, here, in the case of a plant certainly requiring as much skill as any of them, no such division is made. But what are fancy Auriculas? It is the first time I have ever heard of such a term. I suppose Alpine Auriculas are meant, but I believe nothing can be more useless than the attempt to change names which have a hold on the floral public. Some wiseacre proposed something of the kind with Dahlias, but we never hear now of any hut the old-fashioned term. I do not know how many names have been proposed for the variegated Pelargoniums, but ninety-nine out of a hundred still speak of the Gold Tricolors, Silver Tricolors, and Bicolors. But this is not what I have to complain of. I think, in the first place, that the beauty of a stand of Auriculas will be spoiled by the selfs being excluded, as they always tend to brighten it up so much, and that a stand of Alpines and self stage flowers will be a most muddily-looking concern. Secondly, I know many growers, such as my old friend Mr. Lightbody, of Falkirk, who would not allow an Alpine near their place, because the pollen so much more readily fertilises that it almost destroys the hope of obtaining pure stage varieties, and thus many growers will be able only to contend in one class.

This may be said to be a "growl;" but I feel that these things ought to be exposed. Why the Council could not have allowed things to have remained as last year, only offering prizes at a reasonable day, I cannot understand. And here let me protest against the way one is treated in these matters. Last year, when I wrote on the absurdity of offering prizes on the 9th of May, I was told by a worthy who signed himself "AURICULA," but who never grew an Auricula in his life, that the "animus" of my paper was clearly to be seen; inferring that because I had been scurvily treated by the Council some years ago, that I was only actuated by a feeling of hostility, and, when I wrote a short reply to it, the only point in my reply was cut out. I do not think this is fair; but it will not deter me from exposing what I think wrong and injurious to the cause I have at heart—the welfare of horticulture.—D., *Deal*.

EARLY VEGETABLES FROM CORNWALL.—The growers of early vegetables in Cornwall had great success in the past year. Upwards of 3600 tons of Broccoli were sent out of the county, against 1500 tons in 1867, and 3200 tons in 1866. The con-

signments of Potatoes were also unusually large, and the crop was the best and most forward that has been known for nearly a quarter of a century.

A SIMPLE MODE OF GROWING MUSHROOMS.

So much has lately been written about growing Mushrooms, and so many methods of cultivation advocated, that I am induced to give you a few notes on the matter. My experience as a Mushroom-cultivator extends over a period of twenty years. During this period I have grown them in many different ways, in many fashionable as well as unfashionable houses and sheds, and in the open air, during summer and winter, in different parts of the country, and for various purposes—for the supply of ducal tables, and for sale in Covent Garden Market—and I can truly say, without desiring to boast of my own success, that there is no vegetable so simple or easy of cultivation as the Mushroom.

The method which I adopt generally for winter supply, and that which I have found the simplest, may be briefly stated thus. I procure two cartloads of good fresh stable manure, and shake out the longest of the straw. I am not, however, very particular about this. Then it is turned over in the open air once or twice to get rid of the rank steam. When this is gone the dung is taken into one of the sheds at the back of the houses, and about four barrowfuls of ordinary fresh soil mixed with it. The bed is then made up on the floor of the shed to a depth of about 12 inches, pressed rather firmly, and spawned when at a temperature of between 75° and 80°. A covering of about 1 inch of good strong loam in a rather rough state is then added, and beaten level with the spade. By using heavy loam as a covering, the Mushrooms produced are of a much more solid character than where light sifted soil is used; they are, consequently, more valuable, commanding a far higher price in the market. The whole is then covered up with at least 9 inches of straw or long litter.

I never use any fire heat, as I consider that a piece of useless extravagance. Better Mushrooms can be grown without fire heat than with it, and a continuous supply kept up throughout the coldest winters. Then, if it is so—and that it is so I should be very pleased to show anyone who may favour me with a call—why should our employers be put to so much expense in erecting and heating grand dungeons for this dainty, which can be so easily cultivated without their aid? I have several beds in bearing now that have been made in the manner described. To-day (December 16th), I have picked a punnetful from a square foot. I could pick many such—in fact, the beds are a perfect sheet of white all over. Seeing that they are so easily cultivated, who would be, who need be, without their dish of Mushrooms?—R. G., *Stamford*.

CHRYSANTHEMUM GEM.

ALLOW me to correct a mistake which occurs in the list of hardy bedding plants given by me in the Journal of December 31st, at page 495. "*Calceolaria Gem*," which I wrote by mistake, should be *Chrysanthemum Gem*, the *Calceolaria* of that name being, unfortunately, not so accommodating in its habits as to stand out all winter under ordinary circumstances. A similar but slightly more robust variety of *Chrysanthemum* than *Gem* is grown in some parts of the country under the name of *Ruby*, and if either of them could be improved in colour they would be most useful for supplying large quantities of cut flowers late in the season.—*AYRESHIRE GARDENER*.

SOLANUM CAPSICASTRUM CULTURE.

I AM not aware what the question of "*J. Mason*," respecting *Solanum capsicastrum*, may have been, but I see the answer is, "It requires more heat than the greenhouse—say, 50° to 55°." Now, as I have grown the plant several years, perhaps I may be allowed to differ from the Editors. I say that I believe it to be quite hardy, it having here, in the open ground, stood 10° of frost without the youngest shoots even flagging. When well grown, as it is at Bicton, it is a highly ornamental plant, either for the conservatory or for table decoration.

To grow it well the seeds should be sown early in a little heat, and when the plants are about 1½ inch high they should be potted-off into 60-pots, and plunged in a warm bed; as soon as these are filled with roots they should be shifted into pots of a larger size, and when the weather will permit should

be planted out in a bed of good soil in the kitchen garden, or elsewhere. About the end of September or beginning of October, the best-shaped plants should be potted in 6-inch pots, trimmed into good shape, and kept in a close frame for about a fortnight till they are well established, and then taken to the conservatory. The rest of the plants may remain in the beds, and if, as I conceive them to be, quite hardy, may be moved in the spring to the front of the shrubbery borders where, towards autumn, they will be covered with their beautiful scarlet-orange berries, and add greatly to the beauty of the garden.—A. F., *Dorchester*.

BESS POOL APPLE.

I SAW in the *Gardeners' Chronicle* an account of some Bess Pool Apples recently shown at Kensington, and which were the produce of a grafted tree—i.e., of an old tree regrafted. The improved size and colour of these Apples were made the subject of a leading article, and were said to be well worth the notice of the Scientific Committee. It is to be hoped there are some practical men on the Committee, in which case I think the discussion will be a short one. It is also stated that the Bess Pool after it once comes into bearing rarely fails to yield a good crop. My grandfather and father, particularly the latter, were great lovers of fruit trees, and planted largely, and we had at one time 120 acres of orchards. Some of the land proving unfit to grow fruit, the trees were cut down, and I have now 74 acres. Before the duty was taken off foreign fruit, a late-keeping handsome Apple like the Bess Pool would, when fruit was scarce, bring a great price—as much as 6s. a-peck. Now I am selling beautiful fruit of the same kind at 1s.

My father became so in love with the Bess Pool that he planted it largely. He used to tell how a girl named Bess Pool found in a wood the seedling tree full of ripe fruit; how, showing the Apples in her father's house—he kept a village inn—the tree became known, and my grandfather procured grafts. He would then show the seven first-planted trees of the kind in one of our nurseries, tell how London had been to see them and given an account of them in his "*Gardener's Magazine*," make his visitors try to clasp round their boles, and measure the space covered by their branches. He would then boast how, one season, when Apples were very scarce, the fruit of these trees was sold at 7s. 6d. a-peck, and made £70, or an average of £10 a-tree.

So far from thinking the Bess Pool a regular bearer, I believe it to be a very uncertain one, and anything but a profitable one to plant.

The seven trees above mentioned, though the finest trees I ever saw, I cut down twenty years ago, and have been regrafting Bess Pools almost every year in large numbers, still there were enough left to produce last season from two to three thousand pecks. In this part of the country we count our Apple crops by pecks, as a Frenchman talks of his fortune by francs. It sounds better, you see; at any rate, a bushel of Apples is rarely mentioned. Those who notice that when other kinds of Apples are in full bloom, the Bess Pool shows little more signs of growth than in the depth of winter, might imagine that it would generally escape the spring frosts, and so be a particularly certain bearer; but let them look at the small flowers, and short slender footstalks standing closely packed together. Such blooms, if honeydew or aphid attack them, remain as if glued together till the whole bunch falls to the ground, and in the same way a caterpillar will eat every bloom in a cluster. Large flowers, strong and long footstalks widely divergent, these are with me always taken as signs of a good regular bearer.

Ever since I can remember, no one expected a Bess Pool to bear much till it was at least twenty years old; no doubt age has rendered it more precocious to some degree, still it grows too fast when young to bear much. I have trees of this kind to the top of which a ladder of fifty staves will not reach, and of a diameter in proportion, and to show the land suits them, they are in perfect health and growing freely; and yet trees of the Duchess of Oldenburgh and King of the Pippins, not a quarter the size, growing in the same orchard, will on the average of years produce more money, though the fruit be sold at a less price.

Having grafted many hundreds of large trees, I find it is the rule, not the exception, that the fruit is larger, higher-coloured, and earlier ripe on regrafted trees than on those of the same kind with old heads. Is this to be wondered at? Is it not what one ought to expect with a young head on an old root?

The fruit gets more sun and more sap, and must be improved, unless the tree worked is too old to bear the operation, or was unhealthy when grafted.—J. R. PEARSON, *Chilwell*.

THE MERITS AND DEFECTS OF TRENTHAM BLACK GRAPE.

I HAVE fruited Trentham Black Grape four seasons, both in pots and planted-out in the vinery, trained to the rafters in the usual way.

For the latter purpose it is well adapted, and is quite distinct from any other black Grape with which I am acquainted. Its fruit will hang on the Vines as long as that of the Black Hamburgh; I cut the last bunch on the 3rd of the present month, and it was quite ripe on the 20th of August, but most of the bunches were used in December, and at Christmas very few decayed berries had been cut from them—certainly not more than were cut from the Hamburgh.

The berries always colour of a jet black, and, compared with the Hamburgh, they are much more juicy than that variety—so much so, that on laying a large bunch down on a dessert-plate numbers of the berries burst, owing to this and the very thin skin. I have found the berries have a tendency to crack at the insertion of the stalk when they are at the point of colouring, and an amateur, who is also a successful Muscat-grower, told me he had discarded it on that account alone. I have not lost a berry in that way for the last two seasons.

I admit plenty of air, and maintain a dry atmosphere by keeping the hot-water pipes warm during the whole period of colouring. The Lady Downe's in the same house seems to require the same treatment, as the bunches of that variety now hanging are very fine. It requires the same treatment as Lady Downe's in setting—viz., a rather high and dry temperature, yet not too dry, as I damp the house twice a-day, but no water is allowed in evaporating-troughs, or to fall on the hot-water pipes.

As a pot Vine I find it a very shy bearer, I have had it on one or two occasions tolerably good, but it is so uncertain that I have discarded it for that purpose altogether. I think it will be a good stock for grafting weakly-growing sorts upon, at least I intend to test its merits for that purpose during the ensuing season. I have the hope that Royal Ascot will be a better Grape, as it does not seem to require so much care to ripen it, or to preserve it afterwards.—J. DOUGLAS.

PLANTING THE THAMES EMBANKMENT.

On the evening of the last day of the past year, the first of the line of trees was planted that is to ornament the Thames Embankment between Westminster Bridge and the Temple. This line consists entirely of Planes (*Platanus acerifolia*), and the trees, being of good size, already produce a marked effect. They are from 12 to 15 feet high, with stout, clean stems, and heads, which, when the leaves are on, will even during the first summer furnish a line of "greenery" pleasing to the eye of Londoners. The work has been entrusted to Mr. Alex. McKenzie, the skilful designer and Superintendent of the Alexandra Park, and the common sense which prompted him to choose the Plane, in the face of many suggestions he received from those who fancied they knew something about the subject, will meet with general approval. There is no tree for large towns at all to equal the Plane. Those who are accustomed to traverse London have evidence of this every day; and if an example were needed of the rapidity of its growth in one of the most crowded of localities, and the most circumscribed of spaces, we could not furnish a better instance than that magnificent specimen now growing in Stationers' Hall Court, a region known only to the pure cockney and the "Row boys." That tree was planted by the present Mr. Greenhill, of the Stationers' Company, when he was a lad, and is little more than forty years old. Everybody should see that tree.

A VINE FAILURE.

A BLACK CHAMPION Vine was planted in the centre of a row of thirteen, with their roots inside, and all were planted at the same time. While the others have done well, have strong wood, and have borne good fruit plentifully for two years, that Black Champion continued in a weak sickly state, did not make the least growth, and produced only a few leaves. Think-

ing that there was something at the roots that prevented growth, I carefully removed the soil, but I found nothing to cause suspicion beyond this, that I found the roots were the same as when I put them in, which certainly cleared up the mystery as to the cause not growing, but the cause of the roots not growing I could not make out. I found the soil in good condition. There were no water spouts near to make the ground at all saturated. I afterwards planted a Black Hamburgh, in the hope of filling up the vacancy, and used a fresh compost for its roots; but to my great surprise and disappointment, this Vine is going just the same road as the Black Champion.—H. W. T.

[Will any of our readers help to explain the seeming anomaly? One Vine out of thirteen refusing to grow would not have puzzled us so much, as there are many circumstances that tend to impair the vital energies of plants just as there are among animals, and for which no valid reason can be assigned; but it is strange that a second Vine should share the same fate in similar conditions. There must surely be something singular about the position.]

PLANTS IN FLOWER IN DECEMBER.

ACKLAM HALL, MIDDLESBROUGH-ON-TEES.

ENCLOSED is a list of a few plants in flower during the month of December. For the last few days we have had winter in earnest here. On the 31st of December the thermometer stood at 16°.

Dec. 5. <i>Rhododendron hirsutum</i> .	Dec. 10. <i>Viola lutea</i>
<i>Jasminum nudiflorum</i>	<i>Pentstemon coccineus</i>
Mule Pink	<i>Phloxes</i>
<i>Mathiola annua</i>	<i>Gilia tricolor</i>
<i>Hesperis matronalis</i>	<i>Gypsophila elegans</i>
<i>Asperula odorata</i>	<i>Fuchsia coccinea</i>
<i>Bellis perennis</i>	<i>Leucocorymbium</i>
<i>Veronica syriaca</i>	Rose Fabvier
<i>Primroses</i> , Double Lilac,	" 16. <i>Antirrhinum</i>
and Crimson	<i>Veronica spicata</i>
<i>Gazania splendens</i>	<i>Hepatica triloba</i>
<i>Sedum dentatum</i>	<i>Ilex aquifolium</i>
<i>Viola tricolor</i>	<i>Lupinus albe-coccineus</i>
<i>Pyrethrum parthenium</i>	<i>Helleborus niger</i>
<i>Viola odorata</i>	Marigold
German Wallflowers	" 19. <i>Calceolaria Ruby Bicolor</i>
<i>Phlox setacea</i>	<i>Campanulas</i>
<i>Omphalodes verna</i>	<i>Polyanthus</i>
" 10. <i>Erica carnea</i>	<i>Rose Monthly China</i>
<i>Daphne laureola</i>	" <i>Crimson China</i>
<i>Arabis alida</i>	<i>Schizostylis coccinea</i>
<i>Arctotis breviscapa</i>	<i>Cerastium Biebersteinii</i>
<i>Erica rametacea</i>	<i>Centranthus ruber</i>
<i>Pentstemon Shepherdii</i>	" 24. <i>Malope grandiflora</i>
<i>Potentilla alba</i>	<i>Nigella hispanica</i>
<i>Chrysanthemums</i>	<i>Calandrinia umbellata</i>
<i>Linaria purpurea</i>	<i>Achusa sempervirens</i>

—M. H., *Acklam Hall, Middlesbrough-on-Tees*.

RAINFALL IN DECEMBER AT THE HENDRE, MONMOUTH.

It will be seen from the following table that there were only five days on which rain did not fall, and that the total fall was nearly 7 inches.

Dec.	Inches.	Dec.	Inches.
1	.03	19	.44
2	.10	20	.06
3	.55	21	.40
4	.30	22	.00
5	.10	23	.35
6	.95	24	.06
7	.40	25	.10
8	.05	26	.03
9	.00	27	.15
10	.30	28	.75
11	.06	29	.05
12	.00	30	.15
13	.00	31	.05
14	.50		.00
15	.35		
16	.04		
17	.75		
		Total.....	6.91

—H. COMLEY, *Gardener*.

GARDENING IN TOWNS.

HAVING a few leisure hours these long evenings, I thought I could apply them in writing a few lines for your numerous amateur readers who are fortunate enough to possess a piece of spare ground in our large towns. I have had about thirty-seven years' experience in the situation I now held, and this

has enabled me to obtain a considerable amount of practical knowledge, and to witness a great many changes.

The air in the city of London was tolerably healthy, but as, in addition to dwelling houses, high factory chimneys and steam funnels made their appearance, and began to puff out their smoke day and night, the plants under my care began to show signs of decay, and in a few years withered and ultimately died. This state of things continued till an Act of Parliament suppressed the smoke nuisance. Previously to this I tried all kinds of plants which I thought were hardy and would stand against it, but I found that they failed, although fresh earth, manures, and all appliances, such as deep digging, patent and exciting manures, washing the foliage night and morning with water, hoseing, and syringing were resorted to. At last I found the Chrysanthemum bid defiance to the smoke and bloomed tolerably well. I then set boldly to work and obtained all the varieties of it I could, and filled the borders with it, and up to this time it has proved the best town flower under cultivation; in my opinion it is a very pleasing and useful addition to conservatories and for border culture, also for winter exhibition.

The Temple Gardens are thrown open to the public when these flowers are in bloom, in November, and are visited by thousands of admirers, both rich and poor. I believe that these Chrysanthemums are now grown in every town in England, and keep up their position as second to no other hardy out-of-door plant, except the queen of flowers, the Rose, which, I may state, flourished and bloomed freely in these gardens thirty-six years ago, but it is very indifferent now, as I can only obtain a few straggling blooms of Maiden's Blush, Rose de Meaux, and the old Provence.

For the benefit of your amateur readers, I will at some future time give my treatment, and the names of the most hardy of the large-flowering and Pompon Chrysanthemums, and of the bulbs which I cultivate very extensively; also, of the annuals and bedding plants (I grow four crops a-year in the beds), as well as a list of the shrubs and trees that do best in the London smoke.—SAMUEL BROOME, *Temple Gardens*.

THE LEEDS PROFESSIONAL GARDENERS' FRIENDLY BENEFIT SOCIETY.

THE doings of this Society cannot be too widely known, nor the benefits which it is conferring on its members too extensively diffused amongst the gardening community. I hope ere long to see the praiseworthy example set by the gardeners of Leeds followed by every gardener in Great Britain, and not only in Great Britain, but in every part of the globe where a love for horticulture exists. I look forward to this as an effective means of promoting horticultural knowledge, and not only that, but the dawning of a better day, when the practical gardener shall flourish in the sunshine of greater prosperity, when his position as an educated man shall entitle him to more respect from the hands of those by whom he is employed.

Let us consider what the gardener's position is, the duties he has to perform, and the degree of education required to make him eligible for undertaking the care of a moderate horticultural establishment. First, he must be pretty well up in writing, and all the collateral branches in connection with it; he must also have a knowledge of Latin, must have a knowledge of chemistry, and a score of sister arts and sciences. He must likewise be a man of unblemished character. The varied duties he has to perform occupy the whole of his time; his brain must be always at work, night and day, for the slightest defect of attention would often spoil the labour of a whole year; and for all this care, thought, study, and watchfulness, what is the remuneration? If he is a man without family he may receive from £55 to £70, or £80 a-year, and in a few cases even £100, with a house and fuel, but the latter two amounts of pay are of extremely rare occurrence. Too much care and too little recompense often make the mind sour; then the reign of carelessness commences, and, I regret to say, the habit of drunkenness is indulged in to wear away the time which hangs so heavily and drags its slow course along. The employer becomes disgusted; the man who might, if more consideration and more encouragement had been given him in the first place, have become one of the brightest ornaments of his profession, is discharged from his employment, and rapidly sinks, rarely again to rise.

How different is the position of the artisan, the mechanic, the tradesman, of whatever grade, from that of the gardener! There is no necessity for a first-class education to fit a man

for a carpenter or a bricklayer. There is a simple, matter-of-fact, everyday life; they banish all care and thought from one o'clock on the Saturday till 7 A.M. on the following Monday, and yet the remuneration which they receive is in most cases double that of the gardener's. On a Saturday afternoon the fire is raked out from under the mighty engine, which becomes still and motionless, and gives those who control it a season of rest and healthful recreation for forty-two hours. But the gardener must still keep plodding on; the objects he has under his care have life, and require help in some form. Too much heat or too much cold will spoil their beauty, or a want of a little fresh air may injure their proper development, so the horticulturist must be constantly watching. He may, certainly, sometimes delegate this duty to his assistant, but even then the fear lest his instructions should be forgotten prevents that absolute relaxation so beneficial to the health of both mind and body.

An institution like that founded at Leeds two years ago will in a great measure provide the means of relief to many minds burdened with care, and toil, and disappointment; and not only that, it will be the means of improving the minds of its members, for here these can meet, and socially impart to each other their successes or misfortunes, and receive either congratulation or assistance as the case may require. A simple hint given in due season on any particular subject may be the turning-point which will lead to success instead of disappointment.

Then, at the meetings essays on various subjects connected with horticulture are read. This stimulates the minds of the younger members to prepare and school their energies, in order that they may compete with their elder brethren for a share of the approbation of the Society; thus preventing their minds being led astray by evil influences, too often and too temptingly placed in their way.

The Society has a very judicious code of laws for its guidance both as regards help in cases of sickness or death, and to properly regulate the business of the Society. It appears to have made a very happy selection of officers, and to be at the present time in a very flourishing state; for, to use the words of the able Secretary, "during the past year the income of the Society has been nearly three times its expenditure. At the present time there is in the hands of the Society's banker the sum of £104 10s. 10d." This testifies to the energy of the founders, and of those who have steadily promoted, by their attention and care, the development of an institution which is likely to confer so many benefits not only on the members themselves, but on their employers. The latter will assuredly derive great advantages from the Society, for it cannot fail to be a means of cultivating a better taste, and of causing care and watchfulness to be exercised in consequence of the endeavours of the members to excel each other.

It is, therefore, my earnest hope that I may live to see the day when societies like that at Leeds will be established in every town and village in the three kingdoms, and that all lovers of horticulture will see the advantage of assisting by every means in their power, and will enable their gardeners to provide a more respectable and comfortable position for themselves and families, by giving them wages more proportionate to their requirements and abilities.

I was not aware, when I gave a report in these pages of the meeting at Liverpool a few weeks ago, that such a treat as that which I enjoyed on the evening of the 1st of January was in store for me. It appears, however, that the sentiments I uttered on the advisability of instituting a Society at Liverpool were in unison with the feelings of the gardeners who constitute the Leeds Society, and they, in consequence, through their President, gave me an invitation to meet them at their annual dinner, an account of which will be found appended. If, by advocating the propagation and extension of this Society in other towns, I have in any way assisted its development, my journey to Leeds will not have been in vain. It will also add one of the greatest pleasures to a life devoted to the practice and interests of horticulture.

In conclusion, I earnestly hope the matter will be energetically taken up, and that the powerful influence of THE JOURNAL OF HORTICULTURE may be the means of advancing an object so desirable for the good of so large and intelligent a body of men as the practical gardeners of Great Britain.—J. WILLS, F.R.H.S.

The second annual dinner of this prosperous and useful Society ("The Leeds Professional Gardeners' Friendly Benefit Society"), was held at the Templar Inn, North Street. Mr. R. Featherstone

presided, and the vice-chair was occupied by Mr. J. Wise. The Secretary, Mr. W. Sanley, then read the report, which was as follows:—

"Your Committee present the second annual report, with the gratification of knowing that the Society is in a prosperous condition. The balance sheet shows that the funds of the Society have steadily increased since it was first established. This year its income has been nearly three times its expenditure—namely, total income, £81 15s. 6d.: expenditure, £28 14s. 3d.; which is a saving for the year 1868 of £53 1s. 3d.; and when added to the saving for the year 1867—£51 9s. 7d.—makes a total placed to the credit of the Society of £104 10s. 10d. During the year 2 members, through not paying their contributions, have got out of compliance. In the same period 9 honorary and 12 ordinary members have been enrolled, now making a total of 16 honorary and 104 ordinary members. Your Committee trust that no efforts on its part have been wanting to make the Society as worthy as its promoters intended it to be, and that it is able to accomplish the primary object of a benefit society. Those who have had the privilege of attending its monthly meetings can testify to the great pleasure and instruction they have derived therefrom. Rule 31, which allows members the privilege of bringing any extraordinary specimens of flowers, fruits, &c., before the meetings, has been well responded to, and has been the means of diffusing much useful information. To render these meetings additionally interesting and instructive, it was thought advisable to invite members to contribute and read short papers or essays on subjects connected with our profession. This, we are happy to say, has realised our most sanguine expectations. The following members, who have kindly acceded to our request by contributing the papers enumerated, deserve our best thanks. February 4th.—Mr. Baynes gave the opening address to a very large attendance of members. March 3rd.—Mr. Featherstone read a very interesting paper on 'Boilers and Heating Principles.' April 7th.—Mr. Dean gave an account of the International Horticultural Exhibition held at Ghent, with remarks on Camellias, Azaleas, and other plants cultivated in Belgium. May 5th.—Mr. Batger read a paper on 'The Rise and Progress of Gardening.' July 7th.—Mr. Wise read a paper on 'The Gardener and the Garden.' September 1st.—Mr. Boston read a paper on 'The Hot Season, and its Effects upon Fruit and Flowers.' October 6th.—Mr. Rushforth read a paper on 'The Propagation and Growth of the Hyacinth and other Bulbs.'"

In the course of the evening the toast of success to the Society was given by Mr. Dean, and responded to by Mr. Baines. The Chairman also gave the health of the "Practical Horticulturists of Great Britain." Mr. John Wills, of Ashburnham Nursery, Chelsea, replied, and spoke upon the position that gardeners occupied, and the place which they were entitled to hold, from their intelligence, their assiduity to their duties, and their habits of sobriety.—(*Yorkshire Post.*)

NEW BOOK.

Refugium Botanicum: or Figures and Descriptions from Living Specimens of Little-known or New Plants of Botanical Interest. Edited by W. WILSON SAUNDERS, F.R.S., F.L.S. London: John Van Voorst.

The title of this work is a quiet, good-humoured rebuke to the taste of the age, which permits and admires only those plants that are gaudy in colour and flaunting in foliage, while gems of exquisite beauty, such as are here taken under the protecting care of Mr. Wilson Saunders, are almost entirely disregarded. There was a time when plants of the same class as those for which Mr. Saunders has now provided a home were the admiration, not of the botanist alone, but of all lovers of plants. They were commonly met with in all good gardens, and they were the subjects for the pencils of the most accomplished of our botanical and floral artists. In the earlier volumes of the "Botanical Magazine," in the "Cabinet" of Loddiges, and in the works of Sweet, these modest, unadorned beauties were thought worthy of a place, and received the admiration of everyone. Now-a-days they have to find a "Refuge;" and it is well that we have among us one who, having the taste and the means, has also the liberality to provide a refuge for these despised and neglected outcasts of horticulture, for it is at the horticulturist's and not the botanist's door the reproach must lie.

Two parts of this beautiful work have appeared, and each contains twenty-four plates of royal 8vo. size, drawn on stone by Fitch, whose soul as well as pencil is evident on the face of them. The detailed and intelligible, even to the uninitiated, English descriptions of the plants already published are by Mr. J. G. Baker, of the Kew Herbarium; and the services of Dr. Reichenbach, of Hamburg, whom Mr. Saunders has also secured as a coadjutor, will, we presume, be engaged when Orchids form the subject of illustration. Mr. Saunders himself, besides being editor of the work, appends to each description a cultural paragraph, indicating the treatment that each

plant requires, the soil in which it best succeeds, and the source from which it has been derived.

We most sincerely thank Mr. Wilson Saunders for having so disinterestedly undertaken this useful work; and we cannot but believe that all true lovers of flowers, who find in them other beauties and delights than those which merely please the eye, will be influenced by Mr. Saunders's example, and not only cultivate, but study through the means of this book, a class of plants of which very few in the present day have any knowledge.

POMOLOGICAL GLEANINGS.

"I MAY mention," writes "ARCHAMBAUD," "that if to the Rev. George Kemp our thanks are specially due for the stimulus that has been given to the OPEN-AIR CULTIVATION OF THE GRAPE by his very liberal offer of prizes during the past season, we have still further to thank that gentleman, who, as may be seen by the schedule of the Royal Horticultural Society for 1869, which is now before me, again offers the same liberal prizes to be contested for. These are to be awarded by the Fruit Committee at the meeting at South Kensington on October 19th. The conditions stated are, 'For the best dish of Grapes, consisting of six bunches of any variety grown in the open air against a wall, without any protection whatever. First prize £3, second prize £2.' Let us hope for a genial season and a spirited competition."

WORK FOR THE WEEK.

KITCHEN GARDEN.

PROCEED with digging, trenching, &c., wherever there is vacant ground. If some of the ground should require digging a second time previous to cropping, so much the better; it will amply repay the labour. Cover Celery with dry litter to protect it from frost. Attend to the keeping-up a supply of *Sea-kale*, *Rhubarb*, and *Asparagus* according to the demand and convenience, by introducing quantities of the roots into heat at intervals of about a fortnight. Also keep up a supply of *Dwarf Kidney Beans* by making frequent sowings under favourable circumstances. These are generally grown in pots placed in vineries or plant houses, but their liability to the attacks of red spider renders them dangerous inmates of such structures, and where it can possibly be done, they should be planted in lines in the bed of a pit devoted to their culture.

FRUIT GARDEN.

All fruit-tree planting not done in the autumn should be proceeded with during mild intervals. Wherever the subsoil is bad it should be entirely removed, and a platform of brick-bats, rubble, or cinder ashes rammed hard at about 1 foot below the ground level. On this place, if possible, a little rough turf in a fresh state, and be sure to mix some fresh maiden soil with the compost—sound and tenacious loams for Apple and Pear trees, sound yet mellow loam for Peach trees, Apricots, &c., and free upland soil for the Plum, Cherry, Vine, and Fig. Continue nailing and training fruit trees, and lose no time, when the weather permits, of advancing these matters. Where such work is completed, we would advise a syringing with the laundry soapsuds, saturating every crevice in the wall. This is an old plan, and a very cheap and good one.

FLOWER GARDEN.

During the favourable weather we are now experiencing, any alterations out of doors that require to be made may be pushed forward with vigour. Shrubberies may also be thinned where this involves only the cutting-out of overgrown plants, or lopping deciduous trees; but where evergreens, generally, require pruning, that is best done in March; for although, when the winter proves mild, such work may be safely performed at any time, it is never well to depend upon this. When the hands cannot be profitably employed at out-door work, prepare a good stock of pegs, Dahlia stakes, tallies, brooms, &c., and store them away in an orderly manner so as to be ready for use when wanted. Now that there is no frost, look over beds planted with bulbs, and where necessary stir the surface, so as to keep the soil open and friable, and give it a fresh appearance. Trap mice, which are often very destructive to bulbous plants. Look well to Dahlias and Hollyhocks; the latter when planted skilfully produce an excellent effect, and, therefore, especial attention should be paid to having a good supply of them. See that half-hardy plants and tree Roses of tender habit are protected. A wicker screen, and even spruce fir boughs

stuck round them, meeting at top, and covered with fern, are very good protections. They sometimes suffer as much, however, from close covering as from frost. Frosty winds are, perhaps, more prejudicial than anything.

GREENHOUSE AND CONSERVATORY.

In reference to the use of artificial heat for these structures, too much stress cannot be laid on the moderation necessary. As has been often well observed, the fire king is sometimes a greater enemy than the ice king. Try to insure sufficient atmospheric moisture without drip. To accomplish this there should be a moderate but permanent amount of moisture, supplied either on floors or in contact with the return pipe, especially during the day. Watering should now be conducted with great care. Keep newly-potted plants close, and when the weather is favourable syringe a little, so as to maintain a healthy condition; but until the growth of the plants shall have indicated that they have taken to the fresh soil, apply water very sparingly at the roots. *Luculias* in pots should be encouraged in order to flower them before those planted in the conservatory border, for it is desirable to prolong the blooming season. When *Camellias*, *Epacris*, *Heaths*, and other winter-blooming plants form the principal inmates of this house, 40° will be sufficiently high, and with a dry atmosphere the temperature may safely be allowed to sink a few degrees on cold nights; but in cases where the harder kinds of winter-flowering stove plants are brought in while in bloom, 45° should be considered the proper mean temperature at night. Let whatever water may be required be given early in the day, so as to allow advantage to be taken of sunshine whenever it may occur, in order to give air for the purpose of drying the foliage. Many entertain an opinion that little attention is needed to properly supply plants with water at this season, and they only look over their stock at intervals of several days. I would, however, caution young gardeners against this mistake, and advise them to examine each plant at least every alternate day, deferring the application of water until it is really required, and then giving a liberal soaking. Attend daily to the removal of dead leaves, and directly any of the flowering specimens become shabby remove them to some out-of-the-way place, taking care that they receive proper treatment as regards temperature and other conditions, and supply their places with others in full beauty. Soil, crocks, charcoal, and whatever else may be necessary for potting, should be had in readiness for use when wanted. If the soil in any pot is sodden with water it should be turned out of the pot, the drainage examined, and no more water be given until it becomes dry. If a plant droops, and the soil on the surface appears damp, by turning the ball out of the pot it will be seen whether the whole or only a portion of the soil is wet, as sometimes, if light soil is used and plants are fresh-potted, the soil when it dries shrinks from the side of the pot, and then water, when supplied, runs down and moistens the outside without penetrating the ball.

PITS AND FRAMES.

In mild weather like the present let as much air as possible be given to all structures in which half-hardy plants are kept. Too little water can hardly be given to plants in these structures, and when it becomes necessary to afford any let it be done in the morning of a fine day, freely admitting air afterwards, in order to dry up all superfluous moisture before evening. *Auriculas* must now be looked over. *Pot Tuberoses*, and when fine give air to *Mignonette* and *Stocks*. *Neapolitan Violets* in frames may be forwarded by shutting up early in the afternoon; those in pots, by keeping them in a temperature of 55°. To insure their perfect safety from frost it is necessary, however flattering the appearance of the evening may be, always to cover up at night, as the experience of our changeable climate has taught us that the regular attention of a few minutes to such matters will insure us from a woeful surprise some frosty morning.—W. KEANE.

DOINGS OF THE LAST WEEK.

Our chief work has been a continuation of that adverted to lately—viz., levelling, turfing, pruning, cleaning walls, and pruning orchard-house trees, not so much as yet absolutely necessary, as because the washing-down walls, washing trees, &c., furnished good and timely employment in wet days, of which we have had several, along with a high barometer. Instead of a repetition of these matters, we shall allude to a few

subjects that have come under our attention, and to which we have not more particularly alluded lately.

Hardy Roots, as *Potatoes*, where a little protection can be given, *Jerusalem Artichokes*, *Globe Artichokes*, *Sea-kale*, *Rhubarb*, *Horseradish*, &c., may all be planted now whenever the ground is sufficiently dry. *Globe Artichokes* should have a wisp of litter fastened round them and over them. Even where there is a plantation it is advisable to plant a few pieces or a row every season, as the period of production is thus prolonged. In some families the demand for these rough-looking things is incessant. Our main stock having suffered a little from the excessive dryness of the past summer, is now as green as at midsummer, and therefore will need to be well protected when frost comes. This plant has proved itself hardy in many places, but we have known cases where it has stood well for five winters, and been completely destroyed in the next winter. It is best, therefore, to err on the safe side. *Jerusalem Artichokes* are also in great demand in some families. We shall not have enough, and we have frequently known the time when a basket would have lasted a season. Many consider the soup made from them a great luxury. We have never known them to be injured by frost, though in severe weather, and when the tubers are near the surface, a little litter, or even their own stems laid over the ground, would do no harm. We are often surprised that this plant is not more used for pheasant covers. When the birds become used to them they feed on the tubers freely, digging them up for themselves. *Potatoes* after having been sprung may be planted at the foot of walls and fences with all exposures, except the north, and when up a little protection may be easily given to them. They can thus be had early by those who cannot afford glass sashes for them. We have had them thus almost as early as when we used a slight hotbed, protected with mats, &c., at night.

Herbaceous Plants.—The rage for the massive and the gay has been making sad havoc among many of our old favourites, and yet what can be more interesting than borders of the old-fashioned plants, giving us something in bloom all the season? We look now in vain for the perennial *Asters* and *Solidagos*—the purples, blues, whites, and yellows that gave such a charm to the late autumn months. Several times, after having collected a few, we have been forced, from want of room and the demand for other plants, to allow them to nearly disappear. From the *Christmas Rose*, early *bulbs*, *Heartsease*, *Daisies*, &c., down to the *Solidagos*, there was always something to admire. True, like most other plants, they are apt to degenerate when left to themselves, but they amply repay the trouble of taking up those inclined to spread, dividing them or cutting them in, and giving some rich compost to their roots when digging. When herbaceous plants are to be shown to the best advantage, they must have this kind treatment every season. If even lifted every season, and they thus become used to it, the soil pulverised about them, and a little enriched when necessary, they will never seem to suffer the least injury from the removal, and will bloom the more freely in proportion to the growth they make. Even carefully digging among them, and cutting-in those inclined to overgrow their space, will be attended with much benefit. As regards those which throw out offshoots, or otherwise spread freely, when they are thus cut in it is advisable to leave a part of the fresh growth outside to bloom, and take away or destroy the older or central part. There are many plants which it would be of little use to dig down, unless a deep trench were kept at hand, and, as in a large piece of ground the wheeling-away would be a serious item of labour, it is no bad plan when such pieces are not wanted elsewhere, to shake the soil well from the roots and make a burning heap at hand, so that the burnt produce may again be thrown over the ground.

In all cases where there is a choice collection the plants should be well marked, and the tally should lean over the roots in a particular way, so that the workman may know where to look for them. If something like this plan be not followed valuable plants will certainly be dug down, unless the same man, and he an enthusiastic lover of these plants, do the digging year after year. It would be better to pay an ordinary workman or labourer to keep away, than allow him to dig carelessly in a choice herbaceous border. An enthusiast in Musk had the finest border we ever saw. A clever jobbing gardener trenched it up or dug it deeply, and the Musk is looked for in vain. Let alone or top-dressed, there would have been almost enough to supply the metropolitan markets with pots of Musk.

The growing only a few showy plants in great numbers has the tendency to lessen the attention to matters of detail that was absolutely necessary in our younger days. Were more attention paid to the old-fashioned florists' flowers, such as the *Anricula*, *Polyanthus*, *Pink*, and *Carnation*, &c., as well as the rougher *Dahlias* and *China Asters*, there would be more concentration of effort upon many little matters that are apt now to be neglected. Little things in the present day are apt to be overlooked; but it should never be forgotten that the man who cannot bend his mind to make much of trifles would act wisely in directing his efforts to something else than gardening. It is just the trifles that make or mar.

Shrubs and Shrubberies.—With the exception of stray flowers on the *Corchorus*, some *Honeysuckles*, a few *Roses*, and some opening blooms on the *Pyrus japonica*, the shrubs in bloom now are chiefly three—namely, the *Laurustinus*, the *Chimonanthus fragrans*, and the *Jasminum nudiflorum*. In many places where the *Laurustinus* was cut down to the ground in the winter of 1860-61, and where there was enough of patient philosophy to wait, the shrubs are now in excellent condition. Nothing has surprised us more than the dispatch with which nurserymen, after losing their thousands and hundreds of thousands of plants in that eventful year, had a young saleable stock. Few evergreens will outshine the *Laurustinus* in winter, and we like it as much before the blooms open as afterwards.

Unfortunately, we have never seen the *Chimonanthus fragrans* do well except against a wall; and the best mode of securing abundance of its purple-creamy rich-scented flowers, is to train and prune it so that there shall be plenty of twigs all over it every summer, ranging from 4 to 12 inches in length. These, if well exposed to the sun, will now be covered with opening and opened buds; and when we do not choose to cut these shoots, a few flowers gathered from them and strewed among other flowers in vases, &c., will give the whole place a rich perfume. This must not be overdone, or the scent will be too strong, rendering the aroma even from *Violets* almost imperceptible.

The third plant, the *Jasminum nudiflorum*, has been for the last two months a mass of golden blossom. The flowers stand best, perhaps, when the plant is placed against a wall or fence, but commonly, and especially in mild weather like this, it succeeds very well in the open ground either as a bush, or a standard. Grown to some 7 or 8 feet in height and then allowed to form a large head, it would make a beautiful pendulous shrub. It is easily propagated; in fact, if the wood is allowed to rest on the ground it will soon root and form separate plants. We have always had something to prevent our securing a good stock of it, as it could be used for many purposes. Almost every green twig it forms in summer will be clothed with yellow blooms all through the winter. A succession of frost and wet injures the bloom, and therefore some large plants would be worthy of a place under protection, where there would be light and yet no wet. Would that it had the scent of *Jasminum revolutum*, but it is scentless.

As a mark of gratitude to Mr. Robson for his excellent papers on Winter Gardening, we would mention this plant as worthy of his notice. We are afraid it would do little good transplanted, but plants might be kept in pots and plunged, either as little standards, or low bush plants to cover a bed. Many of our common shrubs generally grown as bushes, would have a different aspect when grown as small trees, as standards with clean single stems. The papers on this subject are very timely and well worthy of careful reading and practical appreciation. Shrubs will ever be most effective, individually considered, when thus grown, and as single specimens on lawns, &c., will always look better than a mere bush. A single-stemmed plant may feather to the ground.

Shrubberies as a whole should be treated according to what is required from them. When used solely for shelter, or to conceal something that it is not desirable to see, or merely to secure privacy in the inside of the shrubbery, the chief point is to plant rather thickly at first, and then to prune and thin out so that there shall be living branches and foliage right down to the ground. In the earlier years of such a shrubbery, forking over the ground will hasten the free growth of the shrubs. When these begin to meet all forking and digging will be unnecessary, and will do harm instead of good. The leaves that fall, if the wood is thick enough at the sides to prevent them blowing out, had better remain and rot-down as a surface-dressing.

Shelter and concealment are often required along with fine specimens of evergreens, as *Abutus*, *Phillyrea*, *Sweet Bay*

Hollies, *Cypresses*, *Arbor-Vitæ*, &c. In such a case all the favourite plants should be placed far enough apart, say 20 or 30 feet, and the other spaces filled up with *Laurels*, *Lilacs*, &c. The great advantage of the filling-up plan is, that from the mutual shelter given all the best plants will grow much more rapidly than if they stood there at first alone and thinly. The great matter not to be lost sight of, is to thin and prune in time, so that all the trees or shrubs destined to remain shall have full opportunity of light and air to feather down to the ground. Even a good *Holly* tree with a clean stem is inferior, as an object of interest, to a noble pyramid with its healthy living base sweeping the ground.

In all ornamental planting we are in danger of committing two errors—we plant our principal and most particular plants too thickly, and then we forget to thin the less valuable ones in time. When we plant specimens only a few inches in height, it seems to be difficult for us to carry our mental vision forward for twenty-five or thirty years, or more. We have been cutting-out to a considerable extent in our small place, and we heartily wish that we had given more than double the space to many trees. Most of the *Pinus trioe* which we wish to be thoroughly ornamental, ought to have at least from 30 to 50 feet to expand themselves in. Often two fine plants of these are spoiled because both are so good that we cannot make up our mind to sacrifice one.

It is not so much the thick planting at first that is the evil, it is the neglect of the thinning in time. The thick planting is often just another name for quick growth. Even if we wished a wood of *Larch* to grow up quickly, we would plant the trees 4 or 5 feet apart instead of 10 or 20 feet, and then the first thinnings would not only be useful for 9-foot rails, but whilst they stood they would make the great bulk of the trees grow faster. Single specimens of trees or shrubs on an exposed lawn are always very striking; but if we were called upon to cover a lawn very much exposed as soon as possible, and as taste would approve of, with fine specimens, we would not plant the specimen alone, but in the centre of a small clump, the outside formed of quick-growing hardy plants, to be gradually removed, so that the main plant should not be injured. This plan, of course, would involve more first expense and more ultimate labour, but in a bare place we should obtain fine specimens sooner, and the lawn at first would look more furnished. We have known places thus planted by first-rate artists, and their designs completely frustrated, because of the unwillingness to touch what such great men had planted. No such danger will occur, when in ornamental grounds what are intended to be specimens are planted at first far enough apart to reach their full size without being encroached upon, but in all exposed places such specimens will grow slowly. They will in general grow very symmetrically, and will need but little looking-after. We have noticed specimens, however, so treated that in fifteen years were not so large as others nursed up in seven or eight years. The great evil is, the nurses are too often allowed to remain too long. As a general rule, where rapid telling growth is the object, the old planting axiom holds good, "Plant thickly, thin quickly."

When shrubberies are intended to be ornamental in themselves, regular lines, whether straight or curved, should be avoided next the eye of the observer. The more the line is broken by bold outjutting specimens and ingoing recesses, producing great variety of outline, and the grass or moss going up into all the bends and sinuosities, without a mark of a spade or fork to break the spell of the picturesque with its variety of light and shade, the more pleasing and delightful will such shrubberies be. A straight-lined or curved regular-lined shrubbery is, however, more in character when, for various purposes, it is resolved to have a border for flowers in front of it. As a general rule, all such borders will detract from the picturesque beauty of the shrubbery, because giving it more of the gardenesque and the artistic character by the mere regularity of its outline; but the front of the shrubbery, whether always evergreen, or at least a mass of green in summer, will greatly enhance the beauty of the flowers in the border, not only by the contrast of the green background, but also by this background throwing back the rays of light over the colours in the flowers. We have done away with such borders in front of *Laurels*, &c., but we are well aware we have thus lost a great element of attraction. Even when roughly ribboned they were very effective. We noticed last year a narrow ribbon border at *The Hyde*, but the deep green background of *Laurels* gave it a charm it would not have otherwise possessed. Some of our older readers may recollect our describing the striking

ribbon borders in the kitchen garden at Loughcrew in Ireland, but the fine green hedges at their back did much to make up their attractiveness. Even the long winding borders at Enville, more lately noticed, would have been robbed of much of their beauty had they been without the fine background of Hollies and Laurels. We have anxiously desired for some time to notice the gorgeous flower garden at Woburn Abbey, last summer, perhaps for its size, the most perfect and striking development of the grouping system we ever witnessed; but even there the rich ribbon borders that were felt to be such a relief after being dazzled by the more blazing parterres, owed much of their witchery and loveliness to the charms of the contrasting green drapery behind them.

The conclusions at which we would wish others to arrive as well as ourselves are these:—When a shrubbery is full grown and to be looked at as an element of beauty in itself, it should be irregular and picturesque in outline, with the grass or moss finding its way into every recess. Secondly, when the shrubbery is intended to add grace and beauty to the rowa or beds of flowers in front of it, the outline of the shrubbery may be regular to suit the regular lines of flowers. Both plans may be carried out separately, consistently with regard to the most refined taste; but it should never be forgotten, that in the latter case the shrubbery or background lends an interest to the flowers, at the expense of robbing itself in turn of so much separate interest. In summer it becomes a secondary object, in winter its very regularity deprives it so far of picturesque beauty. As an element for increasing the interest of a ribbon border there can be no doubt of its value, or if there is, our readers must settle it for themselves, by deciding under what circumstances they have themselves derived the greatest pleasure.—R. F.

COVENT GARDEN MARKET.—JANUARY 13.

VERY dull trade, and supplies more than sufficient for the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	2	0	Melons..... esch	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	2	0	6	0
Chestnuts bush.	10	0	16	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears (dessert) .. doz.	2	0	6	0
Black doz.	0	0	0	0	Pine Apples lb.	3	0	5	0
Figs doz.	0	0	0	0	Plums ½ sieve	0	0	0	0
Filberts lb.	0	0	1	0	Quinces doz.	0	9	1	6
Cobs lb.	0	0	1	0	Raspberries lb.	0	0	0	0
C gooseberries .. quart	0	0	0	0	Strawberries.. per lb.	0	0	0	0
Grapes, Hothouse.. lb.	6	0	8	0	Walnuts bush.	10	0	16	0
Lemons 100	4	0	8	0	do. per 100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	6	0	Leeks bunch	0	4	0	6
Asparagus 100	7	0	10	0	Lettuce per score	2	0	4	0
Beans, Kidney per hd.	2	0	3	0	Mushrooms ... pottle	2	0	0	0
Beet, Red doz.	2	0	8	0	Must.& Cress, punnet	0	2	6	3
Broccoli bundle	1	0	2	0	Onions per bushel	5	0	7	0
Brs. Sprouts ½ sieve	3	0	0	0	Parsley per sieve	3	0	4	0
Cabbage doz.	1	6	2	0	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Peas per quart	0	0	0	0
Carrots bunch	0	4	0	8	Potatoes bushel	4	6	6	0
Canflower doz.	3	0	6	0	Kidney doz.	0	4	0	7
Celery bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers each	1	0	2	0	Rhubarb bundle	0	9	1	6
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	8	0	0	Shallots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	8	0	0	Tomatoes per doz.	1	0	2	0
Horseradish .. bundle	3	0	5	0	Turnips bunch	0	6	0	0

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nursery, Upper Holloway, London, N.—*Descriptive Catalogue of Flower, Vegetable, and Agricultural Seeds, &c., for 1869.—List of Bulbous and other Roots.*

W. Paul, Waltham Cross, London, N.—*Select List of Vegetable, Flower, and Farm Seeds, Gladioli, &c.*

R. H. Poynter, Castle Green and St. John's Nurseries, Taunton.—*Catalogue of Garden and Farm Seeds, and Nursery Stock.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Books (D. M.).—There is but one horticultural dictionary, "The Cottage Gardeners'." It can be had from this office free by post if you enclose 7s. 2d. in stamps with your address. (J. B.).—Mr. W. Paul's book, "The Rose Garden," can be obtained through any bookseller.

WIRE BASKETS FOR A CONSERVATORY (D. H.).—Any of the wireworkers or wholesale florists who advertise in our columns could supply you.

EGGS OF INSECTS (J. D., Ilford).—The eggs like a broad band of small beads round the branch of your Peach tree were laid by a Lackey Moth, *Clisiocampa neustria*. The moth only flies at night; the caterpillars congregate together, forming a nest, and feed on the leaves of the tree.

ERECTING AN ICE HOUSE (C. H. M.).—You must have overlooked our answer, for we remember replying, and referring you to our number published February 7th, 1867, for the plan and description of an ice stack; and to the number published November 28th, 1867, for the plan and description of an ice house.

VINES UNFRUITFUL.—RECONSTRUCTING A VINERY (A Constant Reader).—Very likely the want of success with the Vines may be owing to the number of plants kept in the house, and at all times; but if the Vines have done no good for seven years, and even for a long time previously, it shows that the roots have also something the matter with them. The lights, if so good, would be equally serviceable for a new house, and if the wall is not high enough for the length of lights, you might have the house wider and a hipped roof at back to join the ridge board for your present lights. For a vinery to be forced, we would prefer the roof to have one slope, and the garden wall to be raised. You could then have Peach trees against the back wall, but to do them justice your Vines should be at least 5 feet apart, and kept to one stem, spur-pruned. You will do no good with Peaches if you have stages in the house for plants, so as to keep the light from them. A flue round each end and along the front of the house would be ample. In such circumstances we would not think of lifting the old Vines, better plant young ones. Plant inside. Arches may be 3 feet wide. Pillars may be used, and a wall plate laid on them.

PLANTING FLOWER BEDS (D. B. C.).—In your plan the clumps 6 are too large for the other beds. We prefer oval to diamond-shaped beds. The planting will do very well. In fig. 1 we would centre with Perilla and edge with Lobelia next the Cineraria, and then in 3, 8, we would edge the Variegated Pelargoniums, if white prevails in the leaf, with *Iresine* Herbata kept low. Of 4, 4, and 5, 5, we would plant two with *Amplexicaulis* Calceolaria, and two with *Aurea floribunda*, as proposed. 7, 7, Cloth of Gold does not in general do well in bright sunshine. 9, 9, would be beautiful, if you are warm enough for Coleus. *Gnaphalium laetum* will do well from seed, and so will the Cineraria, a small packet giving a multitude of seedlings; but we prefer plants from cuttings to seedlings, as the latter are always rather green during the first season, and not so white as plants from cuttings.

PLANTS DAMPING-OFF (Xmas).—We think the "Cottage Gardeners' Dictionary," which you can have from our office free by post for 7s. 2d., will suit you, as it gives concise but full particulars of the culture of the plants you name. See "Doings of Last Week," page 12, as to damping among plants. You need have no difficulty if you can give plenty of air, and a little dry heat from a flue or hot-water pipe. Clear the damped leaves away, stir up the surface soil of the pots, wash the pots if at all greasy outside, give no more watering than will prevent flagging, and in these dull days put on a rather brisk fire for two or three hours, and give air top and bottom. It is difficult to keep "damping" from cold frames and pits in such weather, and especially if the watering is not as carefully performed as if the water were the best champagne—without spilling a drop. Even in cold pits damp may be prevented with this care, frequent picking, and moving the plants. Moving plants, if set in the same house, turning them round, &c., will do them good; and if in this weather they can be set so far apart as not to touch each other, all the better.

CUCUMBERS MILDEWEED (W. H.).—Use more dry heat and more air, but not so much of the latter as to distress the plants. Dust the worst-mildewed leaves with flowers of sulphur, and use sulphur freely on the walls, &c. Cucumbers would need little syringing in such dull weather. It would be better to give less heat, so that the heat should be proportioned to the sunshine.

AMARYLLISES (Inquirer).—The best notes on their culture are by the late Mr. Beaton in vol. ix. of "The Cottage Gardener," our first series. The Rev. Mr. Herbert published a botanical work on Amaryllids.

NAMES OF CONTRIBUTORS (J. Westwood).—We cannot state what you require.

EVERGREEN FOR SCREEN (Sunny).—The best of all is the common Yew, and though plants of good size are expensive, yet they are certain to please, and we think in your case are necessary, as you must have a subject that will bear any amount of trimming, and there is none equal to the Yew in that respect. The American Arbor-vita is of a brownish hue, and perhaps inferior to the Asiatic Arbor-vita, which is of a better green and of denser habit. Both, however, form good screens, and bear cutting well; but they have a peculiar brown aspect, that in a design such as yours appears to be, is anything but desirable, for the outlines should be distinct and decided in colour. A shrub of the latter description is the Colchian Laurel, of a shining bright green colour, of pyramidal close habit, very hardy, and which bears cutting well. It is much superior to the common Laurel, and we think a screen or hedge of it will answer your purpose well. Plants of good size may be had at a moderate price, for which consult our advertising columns.

PRUNING ROSES (Idem).—The best time to prune Roses of the Hybrid Perpetual class is during mild weather in February, or if the weather be then severe, pruning may be deferred until the beginning of March; but we prefer, weather permitting, to prune Roses from the middle to the end of February, never pruning when the shoots are frozen.

CUSTARD APPLE FRUITING (A Surrey Subscriber).—We do not anticipate your plants from seed sown last March will produce fruit for five or six years yet; but we are not prepared with any reliable data, and shall be glad of any information on the subject. It was fruited at Earl Powis's, Walcot Hall, Shropshire, in 1823. Directions for culture are in the numbers of our Journal published May 14th and August 27th, 1868.

SOWING GRASS SEEDS ON A LAWN (G. T. B.).—The best time to sow lawn grass seeds is early in April, when there is a prospect of rain soon falling. The places to be sown should be well scratched with an iron rake, especially those which are bare, and on these it would be well to scatter a little fine soil if you do not wish to go to the expense of top-dressing the whole lawn with old rotten manure, mixed with an equal quantity of soil. If, however, a top-dressing be determined on, apply it

in March, and early in April well scratch the surface with an iron rake, and then sow the bare places with the following—*Festuca tenuifolia*, 4 lbs.; *Festuca duriuscula*, 4 lbs.; *Poa nemoralis*, 2 lbs.; *Cynosurus cristatus*, 4 lbs.; *Trifolium repens*, 4 lbs.; and *Trifolium minus*, 6 lbs., in mixture for one acre. The bare places should have considerably more seed sown over them than the other parts of the lawn. After sowing give a good rolling, and neither mow nor roll for six weeks; then keep the grass mown and well rolled.

DIVIDING AUBRIETIA AND ARARIS (S. U.).—You may divide them now in mild weather, but the operation is best done after flowering, and early in autumn or at the end of summer.

PROTECTING HYACINTHS IN BORDERS (Idem).—You may give a top-dressing of leaf mould or cocoa-nut refuse about an inch thick, placing it all over the surface and close to the foliage and spikes, but not over them, and in severe weather put a little dry straw over the plants, removing it whenever the weather is mild. During the present mild weather such protection is not only unnecessary, but positively injurious, as it makes the foliage tender and blanches it.

WINTERING VERBENAS IN THE OPEN GROUND (Idem).—Verbenas cannot be wintered safely in the open ground by a covering of cocoa-nut fibre refuse or any other covering. The old plants, even if preserved, are not to be compared to young plants, either for growth or blooming.

TAKING UP GLADIOLUS BULBS (Idem).—In stiff, heavy soils the bulbs are best taken up when the foliage begins to decay, keeping them in a cool, dry place, and replanting in March; but in light, well-drained soil, and with a mulching of leaf mould or cocoa nut fibre refuse the bulbs now best left in the soil, taking them up only when, from the increase of roots by offsets, they become too close; and this should be done early in March, replanting the same day, and making a proper division of the large blooming bulbs and the offsets. The latter should be planted in a bed by themselves to gain strength.

COMPOST FOR LILIUM AUBATUM (Nottinghamensis).—Two parts of turfy loam, one part sandy fibrous peat, and one part old dry dung, well-rotted manure, or leaf mould, with a free admixture of sharp sand. Good drainage should be provided, and the pot three parts filled with soil; then put in the bulbs, covering their crowns to the depth of about an inch. They may then be placed in a cold frame, and the pot plunged to the rim in coal ashes, or it may be placed in a cool, airy part of the greenhouse, affording it a position near the glass when the stems appear; when they are a few inches above the rim of the pot, the soil should be top-dressed with the same compost as that used for potting, bringing it nearly level with the rim of the pot. The plant should have a plentiful supply of water when growing, increasing the quantity as flowering approaches. A light, airy position in a greenhouse is suitable, or a cold frame will answer for growing the plant for a time, placing the pot out of doors after May in a position sheltered from winds, and removing it to the greenhouse for flowering. The flowers will also open well out of doors if the climate is good. After flowering the plants should have no more water than enough to keep the soil moist and prevent premature decay of the leaves and stems. These, when yellow and dead, may be cut off and the bulbs repotted, keeping them moist during the winter, but not very wet, in a structure from which frost is excluded, or plunge the pots to the rim in coal ashes in a cold frame, affording protection during severe weather.

WATERING MESEMERYANTHEMUMS (An Amateur).—Very little water is required by this tribe of plants at present, and to winter them safely only a little should be given occasionally to keep the foliage or stems from flagging or shrivelling. Occasional waterings will therefore be necessary, especially as the plant is in a room where there is a fire. Guard against making the soil very wet; keep it dry rather than wet.

FUNGUS ON LAWN (H. E. S.).—Probably an application of salt would destroy the mycelium of the fungus; it may be applied at the rate of six bushels per acre, but we are not quite certain whether it would in that quantity injure the grass, which is affected by salt injuriously more readily than many other plants; but to have any effect on the fungus less salt must not be applied per acre. Perhaps it would be well in the first place to give the lawn a good soaking with lime water, made by mixing 12 lbs. of lime in thirty gallons of water; stir well, and when the liquid has stood for two days give the lawn a thorough soaking, making holes, if necessary, to allow of its entering the soil. You may in a few days follow with a good watering of salt water, half a pound being dissolved in three gallons of water and applied to the parts of the lawn attacked by the fungus. In such parts make small holes about 3 inches apart and 6 inches deep, and fill them with the lime and salt water.

NATIVE VINES OF INDIA (J. L., Bath).—More than thirty years ago Col. Sykes introduced into this country, through the Horticultural Society, several varieties of Grapes from the Deccan, India, including the Hubshee, having a very singularly-shaped cylindrical purple berry, with firm, sweetish flesh. All of the varieties have been fruited at Chiswick, but none of them were appreciated for their flavour, being too fleshy and wanting richness. Only one of the varieties is now grown at Chiswick—viz., the Abhee, a very beautiful bluish-coloured sort, but of poor flavour. The Hubshee is, however, still in the country, as we recollect its being exhibited a year or two ago. Perhaps some of our correspondents will inform "J. L." in our columns of its whereabouts. This class of Grapes is more commonly known in England under the designation of "Finger Grapes."

MUSCAT GRAPES (Idem).—The Fruit Committee of the Royal Horticultural Society, five or six years ago, on a comparative trial of all the different named varieties of Muscat Grapes at Chiswick, arrived at the conclusion that there were only two really distinct varieties—viz., the Canon Hall, which is very distinct, and has no synonymes; and the Muscat of Alexandria, which has a multitude of synonymes. The Bowood and Passe Muscats seemed just to set their fruit a shade better than the others, but all are of the same earliness, so that it matters little which named variety be used. This does not, of course, include the small, round Muscat Grapes of the French. Tottenham Park Muscat is the true White Muscat of Alexandria.

ARTIFICIAL MANURE FOR PARSNIPS (B. D.).—Three hundredweight of guano and 10 cwt. of superphosphate of lime per acre, spread on the surface and turned down to the bottom of the trench, according to the Jersey mode of deep ploughing for Parsnip culture.

BONES FOR MANURE (H. T.).—Put the bones into a cask in layers alternately with caustic potash. This will enable you to crush them easily and improve the fertilising quality.

FRUIT OF MONSTERA DELICIOSA (M. F.).—It may be added to the dessert as a variety, but there are pointed crystals in the pulp which are very disagreeable in the mouth. The fruit ripens in about twelve months, and must be quite ripe before eaten. To enable it to be so, it is a good plan to tie it to the nearest leafstalk. We should merely place the fruit on fern leaves in the dish to arrange in the dessert. Its flavour is somewhat like that of the Pine Apple.

NAMES OF PLANTS (E. M. B. C.).—We think it is *Cupressus torulosa*, Bhotan or Twisted Cypress. (*P. P.*)—*Lapageria rosea* and *Cyperus alternifolius variegatus*. (*W. G.*)—*Chimonanthus fragrans grandiflorus*. (*Mary*)—*Exostemma longiflorum*. (*J. F. C. Chapeltown*).—1, *Galega officinalis*; 2, By cuttings of the young terminal shoots. (*W. A.*)—*Lastrea Filix-mas*. (*W. B.*)—1, *Adiantum affine*; 2, *Adiantum capillus-veneris*; 3, *Adiantum cuneatum*; 4, *Nephrodium* (?); 5, *Pteris sulcata*; 6, *Nephrodium decursivo-pinnatum* (?); 7, *Asplenium fontanum*; 8, *Asplenium adiantum-nigrum*; 9, *Ardisia crenulata* (*A. crispata*).

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 12th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. 6	30.197	30.150	53	36	45	43	S.W.	.44	Clear and frosty; very fine; heavy rain.
Thurs. 7	30.273	30.225	50	41	46	43	N.	.00	Densely overcast; cloudy and overcast; foggy.
Fri. 8	30.409	30.318	56	48	48	44	W.	.00	Densely overcast throughout; very mild.
Sat. 9	30.437	30.366	51	39	48	45	S.W.	.00	Densely overcast and foggy; very dull; fine at night.
Sun. 10	30.260	30.166	44	38	47	45	S.E.	.00	Fine; overcast; very fine, cold wind.
Mon. 11	30.126	30.079	41	37	46	45	S.E.	.00	Densely overcast; very dull; cloudy and overcast.
Tues. 12	30.091	30.016	42	38	45	44	S.E.	.00	Overcast; densely overcast; overcast.
Mean	30.256	30.189	48.14	39.57	46.43	44.14	..	0.44	

POULTRY, BEE, AND PIGEON CHRONICLE.

TRIMMING FOWLS AT SHOWS.

THE Bristol and Clifton Poultry Show taking place just after the publication of the recent protest against trimming, I naturally felt very great interest as to whether anything would be done. I am happy to say that, so far as I could see, there did appear to be a desire on the part of the Judges to check the practice, and, though not so far as I could have wished, the grossest cases did appear to be—not disqualified, but passed over in a marked manner. In particular, two of the very best adult Brahma cocks were unnoticed, for the only apparent reason that they were much plucked about the hocks, as the same Judges had awarded them prizes at a previous show. Several excellent Buff birds whose tails had nearly disappeared

were also passed, and, as a rule, the Game fowls and Bantams whose hackles were closely plucked were not to be found in the prize list. I noticed with interest and pleasure Mr. Crosland's cup pen of Duckwing Game Bantams; after the closest scrutiny I could find no reason to think a single hackle had been removed, and many of the prize Game fowls were in the same condition.

There was, however, much to cause regret. Hardly a single Buff cock had his tail entirely left, and partially trimmed hocks were seen in all the feathered breeds. In at least one case a Polish crest was badly plucked, and several Spangled Hamburgs had been trimmed about the breast to make them lighter. In the Game cock classes half-denuded hackles were very general.

Still, I am thankful for what I saw; and with regard to the future, as the Judges seem to have discouraged the practice, I and those who are with me are willing to wait further, and

follow and support them, if they will allow us. We do not wish to act rashly, to oppose them, or to obtrude ourselves offensively upon them in any way; only as the last resort would we act for ourselves, our sole wish being to put competition upon a fair and honourable footing. Notwithstanding, I still request that any who are willing, in case of necessity, to act with me will kindly send me their names, as any suspicion of personality is most of all to be avoided, which can best be done by associating various parties in any action that may be necessary.

Mr. Radclyffe's remarks appear to call for a few special observations. His desire is manifestly to smooth matters for a better state of things, but I do not think his suggestions practicable. With regard to "withdrawing the word fraudulent, and giving a year's grace"—who is to do it? The decision does not rest with me; I wish it did. I would give any "grace"—wait any reasonable time—were the thing then to cease; but I am only one individual, of no name or influence, I cannot say what shall be done. Then, as to terming these things "undesirable," they will be what they are, whatever we may call them, and Mr. Radclyffe himself quotes a judge who says they make showing "as bad as horseracing!"

Then, again, with regard to consulting Messrs. Hewitt and Teebay, Mr. Radclyffe has scarcely a right to assume I have not done so. In fact I have written to both gentlemen, with what result I ought not, perhaps, to state. I appealed publicly to Mr. Hewitt in the very first letter I wrote on the subject in these columns. Such appeals, however, rarely lead to anything, and this opens a large field for difference of opinion. Judges seem to think it inconsistent with their dignity to express their opinions and intentions on any subject whatever. However appealed to, they remain mute. This may be right, but I think, myself, that it would be more consistent with the real dignity of their position, and greatly benefit the fancy, did more frankness prevail, and did they give us, as authority to be followed, their deliberate judgment on any points of general interest from time to time brought forward. We should know what to do, and what to think. And since Mr. Radclyffe has named them specially, I, in this public manner, again respectfully and earnestly ask Messrs. Hewitt and Teebay to give us, in these columns, their opinion on the question of trimming, and to state in general terms what they are prepared to do in the case. If they think "a year's grace" best before active steps be taken, I am quite content, provided steps be taken then. Or if they think all trimming should be recognised and allowed—that the evil cannot be checked, and should therefore be admitted, and trimming allowed to all—even then I am content, for I only want all to be on the same footing. In the best interests of the fancy I ask them to speak, and am willing to bow to their decision, if they will only let us know what that decision is.

But, meanwhile, it is not quite as Mr. Radclyffe supposes. Trimming is not recognised, even by its perpetrators. In Spanish and Game it is—no one ever objects to a Spanish pen for being trimmed, or to a Game cock for being dubbed; but at the Birmingham Show of 1867 a poultry-man, who had won a first prize for his own employer with birds whose hocks were trimmed, but so artfully (I think the feathers left must have been dressed with curling-irons, so artistically were they arranged) as almost to defy detection, objected, in my hearing, to another first-prize bird on the ground that he was trimmed! If he thought the practice recognised, why was this? Now I simply want to have one thing or the other plainly understood, and I think I may with no want of charity say, that any committees which in their next schedules shall omit to insert a "trimming clause," will pretty plainly indicate on which side their sympathies lie.

There are some other matters that need ventilating, but this seems to me the most pressing at present. Moreover, after thinking much over these matters, I have come to the conclusion that the fancy generally requires some much more permanent and definite organisation than it now has. It is now a recognised pursuit, and the competent breeder is capable of rendering essential service to his country. When all "mania" has vanished, and still first-class breeding birds can be continuously sold for £20 each, it must surely be granted that there are very important interests involved. Mr. Crowley's suggestion of adding breeders' names to catalogues shows the growing feeling there is of this, and in some way it will have to be met. The "Poultry Club" was another proof, and, I think, chiefly failed because its scope and aim were too narrow. Much of its action was avowedly against one particular judge; it began, in fact, by attempting to commit murder, and it was,

therefore, little wonder that it should end by committing suicide. But still the want remains. It is a question whether in some cases the "no appeal" from judges' decisions works well, and whether some central authoritative body, which should be acknowledged as ultimate referee in disputed points, would not be an advantage—something which might be what the Jockey Club is to horseracing, or the Marylebone Club is to cricketing—something which should combine our best breeders together, and should associate them and our best judges themselves into a responsible and final tribunal. The question is a large one, and may be profitably studied, but I do not wish to obtrude my own ideas regarding it. I will only say that I think any scheme will fail which does not take as its basis the meeting at the great Birmingham Show, and regard the real interests of all as identical, and not conflicting.

But I am far away from trimming, and close (lest they overlook it), with the repeated request that our two most eminent judges will give us their judgment upon the practice, even if only asked by—NEMO.

P.S.—In regard to dubbing Game, this matter cannot be confounded with trimming, and a change can never be effected by such arguments as those of Mr. Radclyffe or "Y. B. A. Z." Those who wish it should offer prizes at Birmingham for an undubbed Game class, or induce the Council to do so. I believe it would pay, for I can count some half-dozen people who would show Game, but for having to dub them. Once practically started in this way, the question of dubbing would by degrees settle itself one way or the other.

[We have been requested to add the following names to the protest against trimming:—

Herbert Dowsett, Pleshey, Chelmsford.

W. Lawson, Eaglesfield, Yarm.

Loftus H. Ricketts, Banwell, Somerset.]

IN my opinion some of the letters on trimming which have recently appeared in your columns go a little too far—no one can be more anxious to punish any attempt at deception than myself, but if we are to carry out these suggestions strictly, I do not see where we shall stop. I am very glad to say that at present the exhibitor who can show his birds in the best condition will always stand the best chance of a prize; and in the case of Spanish and Game a certain amount of trimming—as the shaving or plucking of the small hair-like feathers on the face, and the cutting off the ridge of small feathers from the sides of the comb of a Game cock—has always been considered allowable. As to the question of dubbing, I am quite sure that no one who can fairly be called a Game fancier has ever advocated its discontinuance; to me half the pleasure of exhibiting Game fowls is not only to have a good bird, but to be able to show him in the very best possible condition—artificial, of course, and therefore just as objectionable to those who cannot show their birds with this advantage, and who are, I suspect, the chief promoters of this new regulation, as the trimming I have mentioned. What I would do is this—suppress as severely as possible all attempts at fraud or deception, such as splicing feathers, blackleading Silver Hamburgs' hackles, pulling vulture hocks, &c., and efficiently show up such cases by affixing a notice to the pen of the cause for which it is disqualified, and request your reporter to publish the name of the offender, but let birds shown in first-rate condition have a better chance than others equally good, but not conditioned, and allow the present recognised trimming of Spanish and Game. If we are to carry out the new regulation in its entirety, we must send our birds to exhibitions straight off their walks in whatever state they happen to be at the time.

I am not a large exhibitor, but know that my views on this matter will be confirmed by all our leading exhibitors of Game, and hope that some of them will assist to ventilate the question. If our friends really want a grievance, let them see to the enforcement of the rule excluding diseased birds from exhibitions. I never go to a poultry show without seeing rousy birds.—BROWN REP.

THE BIRMINGHAM RESOLUTIONS— REGULATIONS OF POULTRY EXHIBITIONS.

I SHOULD be glad to sign the above, which have appeared in your advertising columns, if the framers would give any satisfactory reason why professional dealers are to be excluded from the office of judge. I suppose that amateur dealers may be open to the same objection, whatever it may be. Again,

supposing that all dealers are excluded from judging, I wish the framers of Resolution 5 would state the advantages of publishing the names of the judges before shows are held.

I rarely exhibit, and I am disposed to give my attention more particularly to poultry as a means of general food; but I am very fond of fancy poultry and of poultry shows. I should, therefore, be glad to do anything that would tend to bring about an improvement in the system of exhibiting, and I would sign these resolutions if I clearly saw their drift.

It is very important that all officials connected with poultry shows should avoid exhibiting, either directly or indirectly—that is, either by their wives or children, in the show where they officiate; and that no person should accompany the judge, be the latter dealer or otherwise, but a paid servant not being a poultry-man belonging to any exhibitor at that show; and, moreover, that the book supplied to the judge be simply a list of numbers, not corresponding with the label numbers—as is in some cases now done—arranged under the headings of the different classes. It is also a great point that in minor shows the empty baskets should not be placed, as is often the case, under the pens.—GEORGE MANNING.

THE spirited manner in which "NEMO" and other fanciers have taken up the question of the glaring malpractices at recent shows, deserves the especial thanks of all honest exhibitors, and I trust the matter will not be allowed to drop until it is remedied by the judges disqualifying all pens when detected to have been tampered with.

I fully coincide with the excellent rules of the Rev. G. Raynor, and the sooner committees take into consideration these and other practical suggestions which have lately appeared in your *Journal* the better.

There is another matter which I consider very important to exhibitors, and that is, What is to be the correct guide in selecting birds for exhibiting? The "Standard of Excellence" was published in 1865 by the Poultry Club, with the intention, I believe, that it should be the standard authority; but it is evidently ignored by the judges, as lately I have frequently seen prizes given to birds totally differing from those defined by the rules laid down in that work. It would be more satisfactory if some recognised rules were laid down for the guidance of exhibitors; and it would be very desirable if committees, where possible, would publish the names of the judges in their schedules.—AN AMATEUR.

FANCY TAILORING.

It is quite right to cut one's coat according to the cloth, but it is not at all necessary to use scissors and needles, or any other such manipulation, to bring the natural plumage of birds up to an artificial standard.

"The hireling artist plants his paltry desk,
And makes degraded Nature picturesque."

But what shall be said of the poultry-fancier who takes Nature itself and clips and cuts it, and ties and pins it up to an arbitrary standard of excellence, in order that he may put a silver cup on his sideboard, or a few shillings in his pocket? Of course individuals who indulge in this occupation are tailors in every sense of the word, and it would take a very heavy nine of these to make one tolerably decent man. Do not let us use the word "fraudulent;" that is properly applied to plucky scoundrels who for some great gain risk their liberties. These fancy tailors, for a paltry gain, risk nothing, because they have nothing to risk.

"Some women have no characters at all,"

and I suppose this may be held to be true of both sexes.

Mr. Radclyffe objects to the expression, "fraudulent practices." We will not call these undesirable practices so. They shall be named fancy tailoring. So much for poultry tailors.

I agree with Mr. Radclyffe that in a poultry show all birds should be shown without mutilation or the addition to them of foreign substances. If Game birds are to be shown trimmed, let there be sporting shows for the purpose. I am not insensible to the beauties of a trimmed Game cock, but the trimming of these birds as seen at poultry shows is, after all, a sham, and is not the trimming used for the pit, where it originated.

I particularly object to the words in the protest which has been published—"or the removal of an occasional damaged feather;" because this exception opens the door to every kind of abuse. With the suggestion that these words should be ex-

punged, and with the asterisk which applies to the trimming of Spanish fowls, I will ask you to add my signature to the protest.

Fancy poultry-rearing and showing are very pleasant amusements, and have been made very useful in the food question. Gentlemen who wish to make such exhibitions sporting events should hold shows of their own. Poultry-showing has naturally nothing of this kind about it. It is true it has become a sporting matter; but anything may be made so by those who care nothing for the thing itself—two drops of rain on a window pane, for instance. I distinguish between sportsmen and sporting men.—GEORGE MANNING, *Springfield, Essex.*

GOLDEN POLANDS.

IN your comments on the Birmingham Show, in the number for December 10th, you say that Golden Polands seem to be disappearing, and unless they increase in number and quality they must soon give way to their Silver brethren. This may be true, but I, for one, should very much regret the day when the Golden Poland ceased to appear at our shows. I consider the Golden Poland, when first-class, about the handsomest fowl in existence. No doubt good specimens are rare, but is there not a cause, and a sufficient cause for this? I think there is. The Golden Poland is more difficult to breed perfect than the Silver, and from this cause first-class Silvers have been more plentiful than equally good Golden ones. At our poultry shows one class has been generally considered sufficient for all the varieties of Polands, if they have not been quite ignored. Having only one class, and the Silvers having the start, and, consequently, winning the prizes, the Golden have been neglected, and are now the reverse of plentiful. I hold, however, that they only need a little encouragement to bring them to a first-class position. The Liverpool Committee very generously offered prizes equal in amount to those offered for the Silver and White-crested Black Polands. This Committee, the Birmingham, and the Bath and West of England Committees, are the only ones, so far as my memory serves me, which give separate classes for the different colours of Polands, so that they do not meet with over-much encouragement.

The Golden Poland is a great favourite of mine, and has been ever since I first saw a specimen of the breed, and I should be sorry to see it more neglected than it is now, as it does not deserve such treatment.—G. W. BOOTHBY.

BREEDING GAME FOWLS.

IN breeding Game fowls great care should be taken that no Game hens or pullets are ever allowed to run with or near any farmyard cocks, or any other than Game cocks, as if they mix with such they will sometimes throw back to the cocks in breeding, after a long separation from them, and though such is not generally supposed to be the case, it certainly sometimes takes place. Game cocks and stags may be kept on the same walks as hens of any breed (rather small hens the best), but Game hens and pullets must never mix with any cocks, or stags, but Game, on any account whatever, as it is very likely to injure the purity of breed in their progeny.

In breeding, it is often said that two-thirds of the influence over the progeny comes from the hen, and only one-third from the cock. I have found it in general as follows:—That the cock has two-thirds of the influence over the male progeny, and the hen two-thirds of the influence over the female progeny, the cock having only one-third influence over his female progeny, and the hen only one-third influence over her male progeny. The best chickens, however, of both sexes will take most after the cock, if cock and hens are equal in strength of blood and of constitution, and in goodness; the weakest and worst chickens will in like manner take most after the hen as a rule. Many breeders, however, will differ from my experience as to this I daresay, as I have heard some assert the contrary, but not the majority of those I have compared notes with. Most, however, agree that the cock influences the fighting properties the most, unless the hens bred from are of gamier blood than the cock is. I always like to see the cock influence the progeny as much as possible, as this shows more vigour in general in the brood, especially when with a large proportion of cock chickens. The cock influencing the progeny most shows he is a good brood cock; and if he does not, he may be called an inferior brood cock.

Crossing different colours together I could never recommend

as the proper way to improve is to cross with better shades of the same colour. In breeding and crossing colours of different sorts together, I have noticed that when most of the progeny take after the cock, the cross has "hit right," to speak technically, and, on the contrary, when few or the fewest chickens take after the cock, and more or most after the hens, the cross has usually been unsuccessful. If a first-rate cross, all or most of the cock chickens will take after the cock, and when they do not, I always think the cross inferior, unless the cock is of weaker blood and colour, and not so good as the hens, which would alone, perhaps, make the cross a bad one.

In crossing colours all know, or should know, that dark colours will always prevail, as, for instance, the dark original colours, such as the Brown Reds and Black-breasted Reds, must prevail in all crosses.

The selection of a first-rate brood cock is, I think, the main point in crossing and in all breeding of Game fowls, as no good stock can be expected except from a really good brood cock. A first-rate brood cock in crossing colours will always make the hens "throw to his colour," and when this is the case the progeny is always vigorous and healthy, and this, together with having plenty of cock chickens, is one of the best signs of having a good brood cock. Chickens that do not take after the male parent at all, are not so good as a general rule.

A cock makes a good brood cock from rising two years old until four years old: a cock five years old is too old in general, unless an extraordinarily good bird, and stags are certainly inferior for breeding from in my opinion, and in that of many other good breeders of Game fowls, though many like them for it. Pullet are in like manner too weak to make good brood fowls, and their eggs are also too small. Some assert that pullets will produce more cock chickens than hens will, but I think most decidedly not. As to the age of brood hens it is not material if they are strong healthy birds, but both cocks and hens are well known to be in their prime at two years old, and therefore, in crossing, this is the best age to breed from; but in breeding in-and-in, old cocks to two-year-old hens, and young cocks (not stags) to old hens, will be best, avoiding, if cousin blood can be had, breeding from father and daughter, mother and son, and brother and sisters, as this is breeding too near, and is unnatural.

Many bad chickens have been bred from excellent brood fowls, owing to not paying attention to not sitting the eggs laid after the hens become broody, which eggs never produce good chickens, nor does the first egg of a clutch, as it is in general too small. The same brood fowls may thus have produced both very good and also bad chickens from this cause. Hatching too late, as in August or September, or later, may also produce an inferior brood or broods of Game chickens. I have never hatched later than the middle of July, and never earlier than the end of the first three weeks in March. April and May are the proper months to hatch Game fowls in, and most other poultry as well, for stock, as most breeders will know.

When very small Game fowls were required for making Game Bantams with, such were usually hatched in September or thereabouts, and in breeding Bantams small they should not be hatched earlier than July, or later still, but cold weather must be avoided in such cases, if very late birds. It is also known that early spring-hatched birds will run longer in leg and in thigh, with less proportionate flesh than the late-hatched birds, which are shorter in leg and thigh, and also more fleshy, though with less bone than early-hatched birds. For these reasons the shortest-legged birds should be bred earliest, and the longest-legged should be bred the latest.

No hen should have more than twelve chickens to take care of at the most, otherwise she will not do justice to them, and in cold weather eight or nine, or, as some say, only six, are quite enough if choice chickens.

Some object to huckwheat, or "brank," as food, but I think it very good; but for young Game chickens small wheat and dry stale bread-crumbs, with insects and small worms, do best, without anything else, except good pure water in a shallow pan, and this often changed.

If breeding from old or oldish hens they will seldom lay before February, even if placed together with the brood cock at Christmas, and this is early enough to have eggs for hatching; but if breeding from two-year-old hens, these may lay before their eggs are required for sitting, and their first clutches of eggs will be their best eggs. In any case the brood fowls should not be put together until Christmas, and some do not put them together until February, for fear of the hens laying

their first clutches of eggs too early for sitting. I think it is better, if convenient, to keep brood cocks from any hens, except during the breeding season, and the best brood hens from any cock during the same period, as from midsummer till Christmas for instance.—NEWMARKET.

BRISTOL AND CLIFTON POULTRY SHOW— TRIMMING.

THIS was the third show of the Society, and we are glad to say it was a complete success, as the entries amounted to 1300 pens, and the quality of the birds exhibited has never been excelled, and but rarely equalled. This is still more satisfactory when it is remembered that the Committee have, in establishing their Show, had many drawbacks and difficulties to contend with. At one of their very first attempts to establish this now successful meeting, on the opening day a severe snowstorm, the snow covering the ground to 9 inches in depth, absolutely "snowed them up," so that the attendance of visitors was meagre in the extreme, and had the Committee not pursued the dauntless course they have done, so perfect an exhibition as that which has just closed could never have been attained; but the Bristol and Clifton Committee is composed almost entirely of breeders and exhibitors of fancy poultry, and the most remote thought of falling back was by them never entertained. The consequence was one of the most extraordinary exhibitions that has ever taken place in the locality. The Drill Hall is decidedly one of the best-arranged buildings we have seen for such a show, being spacious, well ventilated, and with abundance of light from the whole length of the roof. The arrangement of the pens themselves was perfect, with one little exception; and to this, with every goodwill, we wish to direct the especial attention of the acting Committee, as it really needs an alteration. First, then, the pens allotted to the Turkeys were too small; and if at the same time these noble specimens of poultry could be placed in a better light, that, too, would be a great advantage. The worst oversight, however, arose from placing the Extra variety Duck class, and the class for Buenos Ayrean Ducks, in the very darkest and least conspicuous part of the Exhibition, even under the other pens, on the floor of the room itself. Now, to every one conversant with poultry exhibitions of the present day, it is well known that the Mandarins, the Carolinas, and a whole host of other varieties of ornamental water fowl constitute one of the most attractive portions of a large exhibition. They are, in fact, the especial pets of the ladies, on account of their resplendent plumage; and no doubt the managers of every show, when they know they have a good entry, cannot do better than give them as prominent a position as they can. It is almost needless to say that Buenos Ayrean Ducks, and, we may add, Black Hamburgs, lose all their beauty of appearance if they do not enjoy a full amount of light.

The Grey Dorkings were excellent in all classes, and we were pleased to note that scarcely one with a deformed foot could be seen; as this defect has of late been more common than in years back, the improvement is the more worthy of mention. The whole of the *Cochins* were such as are but rarely seen, and perhaps the competition for the silver cup for single cocks of this variety has never been surpassed. The two principal birds in this competition belonged respectively to Messrs. Mapplebeck and Taylor, the extraordinary regularity of colour in the latter gentleman's bird deciding the balance in his favour. The *Cochins* throughout were, as we say, good and well shown; and there were a few pens of very good *Brahmas*, but certainly the Light-feathered were the least meritorious. Of *Spanish*, even Bristol itself may justly be proud. Never before were so many and such perfect specimens brought together; and Mr. Hyde has good reason to pride himself, both on his recent success in exhibiting, and again as to his parent stock for the closely approaching breeding season. *Hamburgs* were best in the classes for Spangled, though the Blacks were also first-rate. *Game* fowls mustered strongly, and a few pens of excellent specimens of this breed were passed by as being excessively trimmed in both the front hackle and saddle feathers. The *Game Bantams* were superior, the *Duckwings* especially so. The *Ducks*, forming very large classes, were extraordinarily good, and this was also the case with the *Geese* and *Turkeys*, an unusual weight being attained in most instances. The *French* fowls brought numerous entries, the *Hondans* and *Crève-Cœurs* being shown well and in great force.

The weather being favourable for pedestrians, there was no deficiency in the attendance of visitors, and it may truly be said this has proved the best of the Bristol Shows.

The old saying, that "fools rush in where angels fear to tread," should be, perhaps, a warning to a tyro not to commit to paper the thoughts which come surging up as he recalls his visit to the Clifton Poultry Show, nor would he run the risk were it likely that other fanciers would devote their leisure moments to the service of the Journal and the amusement of your readers. The free lance of "Y. B. A. Z." is, for the present, laid at rest; the winning ways and genial smiles of the "WILTSHIRE RECTOR" have not, as I have reason to know, cast their wonted charm over the regions of the Rifle Hall. Under such circumstances, therefore, you may be glad of a contribution from "E. M. B. A."

First, I must note the extraordinary pluck and perseverance of the Bristol folks, who, in spite of ill luck two years running—last year, I

am told, there was a deficit of £90, determined to exceed their former efforts, and were rewarded, I am glad to say, with triumphant success. No less than twenty-two silver cups, ranging in value from ten to three guineas, were offered for competition, and the prize list in other respects was equally liberal. 1090 entries of poultry, and 187 of Pigeons, proved that exhibitors were prepared to respond to such an invitation, the result being a show such as the west of England has never seen before, and probably equal to any that has ever been held out of Birmingham. The Rifle Hall is admirably adapted for a show, while the arrangements generally seemed good. I heard, indeed, of an unfortunate exhibitor, who missed a bird from one of his pens, and on inquiring, ascertained that it was still in the basket; such accidents, however, will happen in the best regulated assemblies, and I can only wish him better luck next time. On another occasion, the Committee may think it advisable to increase the number of the judges. Two seemed scarcely sufficient for more than a thousand pens of poultry, particularly when the best birds in the kingdom were brought into competition for prizes of no ordinary value.

Entering the Show with a Hambrogh breeder, I proceeded at once to his favourite classes. "Just look at the trimming!" he exclaimed; "there is scarcely a bird in these classes whose comb is not trimmed." Inspecting the birds rather more closely than usual, I could not but agree with him that something had been done to make rough combs smooth. A razor, apparently, had in some instances been drawn across, to cut off uneven points and to remove irregularities. So universal did this appear, that I could not but admire the chivalry of "NEMO" and his faithful few, who hope to check, if not suppress, the practice. In the course of conversation I found that my friend who hates the habit had adopted it himself, but would gladly relinquish it. Would it not be better, I suggested, to acknowledge it as allowable than enter upon what I fear will be an unavailing crusade? For my own part, after seeing and hearing all I did at Bristol, I am inclined to doubt the wisdom of this new movement. You will never persuade the great majority of exhibitors to send their birds wholly untrimmed to shows, when a little trimming will greatly improve them. If trimming is allowed in all cases, as, remember, it is already in some, it will then be neither morally wrong nor in any way dishonest. The best birds, plus trimming, will then win just as they do now; the only difference being that all will be put upon the same footing, and one man will not be regarded as a rogue whilst another can claim to be still a gentleman. Some such rule as this seems necessary for the protection of those who love the fancy yet hate dishonesty.

These remarks will, I fear, rouse the ire of some of your readers; if so, let them remember that I am not advocating or defending such practices as inserting false tails, colouring Canaries, or removing spurs which are outside the leg. With others I rejoiced to find that the Judge had passed over a magnificent Dorking cock (which, if I mistake not, has won high honours this season), because his spurs had been removed. "But is not this great inconsistency?" exclaims an opponent of trimming; "you allow exhibitors to trim combs, yet object to the removal of spurs." The difference, I must admit, is not one of kind, but only of degree; yet after all, the difference is important, one of the points in a Dorking cock is that his spurs shall not grow outside his leg, so that a good judge carefully examines this feature, and should at once disqualify any bird from which the spurs have been taken away. You may as well cut off a Hambrogh's comb as remove a Dorking's spurs. It seems to me, then, simply impossible to prevent trimming altogether. If you wholly forbid it, honest men will have no chance, for judges cannot always discover when trimming has taken place; but allow it in a moderate degree, you take away the moral turpitude otherwise attaching to it, while, on the other hand, if the practice is carried to an excess, it can readily be discovered, and so be checked by the judges.

It was a pleasure to find that my Hambrogh friend, although an unsuccessful exhibitor, was quite satisfied with the awards, although he did not think the Golden-spangled Hambroghs first-rate in point of quality. To my mind many of the birds seemed too small. I am aware that in birds of feather, weight and size are supposed to be of no importance, but as a utilitarian, I cannot but think they would be more serviceable if larger in size. Their ultimate destination, after all, must be the boiling pot; if so, surely size should be considered. A yard of fine Golden-spangled Hambroghs is to my taste a grand sight, and quite as interesting as one made up of smaller birds.

Passing to the French fowls, we thought that one of the first-prize pullets was ruptured, but this may have been a mistake. The Spanish were, as a matter of course at Bristol, of the prime quality. Miss Hyde's first-prize and cap cockerel was at once claimed at £15 15s.

Proceeding to the Dorkings, I could not but be struck with the Coloured class, which comprised birds from almost all the best breeders in the kingdom. Mr. Fox's first and cup birds were quite deserving the position assigned them, being unexceptionable in every point. I cannot say that I much admired the first-prize pullets, they seemed to me knock-kneed and narrow-breasted; one of the pullets, too, had almost a cap comb, but their colour—for Dorkings are in some degree, as I think, birds of colour and condition—was perfect. Mr. Patton's entries were all excellent in colour and size, but the toes of his hens, which were not so successful as his other birds, were set too high up the legs. The glorious uncertainty of poultry-showing was never better illustrated than in the Coloured cockerel class, where a fourth-prize Birmingham bird was not even noticed. Mr. Lingwood's first-prize and cap cockerel was a grand bird, although his feet

were not quite perfect. Mr. Cresswell was fortunate in obtaining a high commendation for a bird, with a wattle swollen to more than treble the usual size. In the Silver-Greys the competition was far less close. The first-prize hens were, if I mistake not, the same as have won wherever exhibited this year; their size is wonderful, but they looked overgrown. Mr. Shorthose's first-prize cock is one of the finest birds I ever saw, notwithstanding a few white spots on his breast, and slightly gony feet.

The Rouen Ducks on this occasion succumbed to the Aylesbury, the first-prize cup pen of the latter weighing 174 lbs., whilst the former, first and second prize, weighed 164 lbs. and 154 lbs. respectively. In the class for *Geese*, the three pens which were noticed weighed 53, 48, and 41½ lbs. The closest run, however, was with the *Turkeys*, the three prize pens of which weighed 45, 41½ and 41 lbs. each.

Before the Exhibition closed the sales amounted to more than £200, the Light Brahmas, especially, going off quickly. A local paper states that Mr. Hyde's first-prize pullets were sold at £15, and that Mr. Crossley's two pens of Carrier Pigeons were claimed at £20 a-pen.—E. M. B. A.

ABERDEEN POULTRY SHOW.

THE Northern Poultry Club's third annual Exhibition was held in the Artillery Gymnasium, Aberdeen, on the 7th and 8th inst. It was a splendid show of poultry, and a fine one of *Pigeons*, not a bad bird being exhibited among the latter. We hope to give a fuller report next week.

GAME.—Cock.—First and Second, J. Anderson, Meigle. Third, W. Bowe, Carlisle. Highly Commended, J. H. Wilson, St. Bees. **Hens.**—First and Second, J. Anderson. Third, R. MacGregor, Perth. Highly Commended, F. McCrae, Aberdeen; W. Bowe. **Chickens.**—First, Cup, and Second, C. Jamieson. Third, J. Brongh, Carlisle. Highly Commended, J. Anderson; W. Bowe. Commended, J. Scott, Broughty Ferry.

SPANISH.—Cock.—First, Master A. Redpath, Edinburgh. Second, W. Meff, Ruthrieston, Aberdeen. Third, Bowman & Fearon, Whitehaven. Highly Commended, S. Mitchell, Aberdeen. **Hens.**—First, Master A. Redpath. Second, W. Meff. Third, A. Gihb, Panmure Pens, Broughty Ferry. Highly Commended, S. Mitchell; J. Hay, Aberdeen. **Chickens.**—First and Cup, Master A. Redpath. Second and Third, W. Meff. Highly Commended, A. Copland, Kintore; Mrs. F. McCrae, Aberdeen.

DORKINGS (Silver-Gray).—Cock.—First, W. Meff. Second, A. Bowie, jun., Carnoustie. Third, J. Catto, Aberdeen. Highly Commended, J. Robertson, Dyce; W. Meff. Commended, J. Simpson, Brighton, Darris. **Hens.**—First, Cup, and Second, W. Meff. Third, A. Bowie, jun. Highly Commended, A. F. Williamson, Caskieben Mains, Blackburn. **Chickens.**—First and Third, A. F. Williamson. Second, W. Meff.

DORKINGS (Any other colour).—Cock.—First, J. Gordon, Manar, Inverurie. Second, J. Anderson. Third, Mrs. F. McCrae, Aberdeen. Highly Commended, H. Pickles, jun., Early, Skipton; Gunson & Jefferson, Whitehaven. Commended, W. Meff. **Hens.**—First, J. Anderson. Second, Miss H. R. Lind, Ladiesford, Fraserburgh. Third, J. Clark, Feabehers Station. Highly Commended, J. Anderson; H. Pickles, jun.; J. Gordon; A. Bowie, jun. Commended, D. Gallatly, Meigle. **Chickens.**—First, J. Anderson. Second, J. Clark. Third, J. Shorthose, Newcastle-on-Tyne.

COCHIN-CHINA (Any colour).—Cock.—First, J. Stuart, Helensburgh. Second, G. Murray, Aberdeen. Third, J. H. Dawes, Birmingham. Highly Commended, G. Murray, Aberdeen; B. C. Urquhart, Meldrum and Bythe, Oldmeldrum; W. Meff. **Hens.**—First, Second, and Highly Commended, G. Murray. Third, Mrs. Oswald, Kirkcaldy. Commended, Gunson and Jefferson, Whitehaven. **Chickens.**—First and Cup, G. Murray. Second, J. Stuart, Thistlebank, Helensburgh. Third, J. M. Dawes, Birmingham. Highly Commended, Mrs. Stronach, Aberdeen.

BRAMA POOTRA.—Cocks.—First, B. C. Urquhart, Oldmeldrum. Second, J. A. Dempster, Stirling. Third, K. Jopp, Aberdeen. Highly Commended, J. Anderson; K. Jopp. Commended, G. Dixon, jun., Westshand, Whitehaven. **Hens.**—First and Cup, J. Anderson. Second, J. A. Dempster. Third, K. Jopp. Highly Commended, W. Meff; K. Jopp. Commended, F. W. Gray, Aberdeen. **Chickens.**—First, Second, and Third, K. Jopp.

FRENCH (Houdans, Crève-Cœurs, and La Flèche).—Cock.—First, J. Allen, Kilbirnie. Second, W. R. Park, Melrose. Third, R. O. Farquharson, Hanghton. Highly Commended, B. C. Urquhart; R. O. Farquharson. **Hens.**—First, W. R. Park. Second, Mrs. A. G. Pirie, Aberdeen. Third and Highly Commended, B. C. Urquhart.

HAMBROGHS (Golden or Silver-pencilled).—Cock.—First, G. Laing, Persley, Aberdeen. Second, J. D. Skene, Aberdeen. Third, G. Campbell, Tillinamolt, New Pittsigo. Highly Commended, A. Pratt, Kirkcaldy. Commended, R. McGregor, Kinoull. **Hens.**—First, J. Baird, Carnbroe. Second, J. Hay, jun. Third, A. Pratt.

HAMBROGHS (Gold-spangled).—Cock.—First, D. P. Reoch, Stewarton. Second, Mrs. Brown, Abercrombie. Third, J. Campbell, Bonnykelly, New Byth. **Hens.**—First, P. Campbell, Oldwhat. Second, J. F. Loversidge, Newark. Third, Mrs. Brown.

HAMBROGHS (Silver-spangled).—Cock.—First and Cup, J. McAndrew, sen., Carnoustie. Second, H. Pickles. Third, J. Sharp, Johnstone. **Hens.**—First, J. M. Campbell. Second, J. Wilson, jun. Third, W. R. Park.

ANY OTHER VARIETY.—First, J. Gordon. Second, G. W. Boothby, Louth. Third, D. Gallatly.

GAME BANTAMS.—Cock.—First, G. Dawie, Netherton, Morpeth. Second, R. Brownlie, Kirkcaldy. Third, J. Scott, Jedburgh. **Hens.**—First, Cup, and Second, A. Dewar, Skene. Third, Bowman & Fearon. Highly Commended, Mrs. F. McCrae.

BANTAMS (Any other variety).—First and Third, Mrs. R. Frew, Sinclairton, Kirkcaldy. Second, T. Watson, Bridge of Earn.

DUCKS (Aylesbury).—First. A. Haggart, Leslie. Second, J. Anderson. Third, A. Gowie, Ellon. Highly Commended, J. Thom, Culsh, New Deer.

DUCKS (Any other variety).—First and Second, J. Anderson. Third, Gunson & Jefferson. Highly Commended, A. Farquhar, Elrick.

TURKEYS.—First, Miss Booth. Second, Mrs. Garland, Cairnton. Third, Mrs. Stronach. Commended, B. C. Urquhart.

GEESSE.—First, E. C. Urquhart. Second, W. Hendry, Aberdeen. Third, Mrs. Garland.

SELLING CLASS.—First, J. Souther, Carnoustie. Second, G. Murray. Third, Mrs. Farquharson. Highly Commended, J. Clark.

SWEETSTAKES FOR BANTAMS, AND BANTAM COCK.—First, W. Hay. Second and Third, J. Anderson.

PIGEONS.

Cup for the greatest number of prizes, J. Grant, Edinburgh.

POUTERS (White).—Cock.—First, D. Stewart. Second, J. Huie, Glasgow. Third, Very Highly Commended, and Highly Commended, J. Grant. Hen.—First, J. Huie. Second and Third, J. Grant. Highly Commended and Commended, W. Meff. Young.—First, and Mr. Meff's prize for best pen of Pouters, D. Stewart, Perth. Second, W. Meff. Third, J. Morrison, Woodhill, Morungaidie.

POUTERS (Blue Pied).—Young.—First, J. Grant. Second, W. Meff.

POUTERS (Black Pied).—Young.—First, J. Sharp. Second, W. Meff.

POUTERS (Any other Markings).—Cock.—First, Second, and Highly Commended, J. Grant. Third, J. Huie. Hen.—First and Very Highly Commended, J. Grant. Second, F. M'Crae, Aberdeen. Third, A. Wright. Highly Commended, J. Huie. Young.—First, J. Porteous, Edinburgh. Second, Mrs. T. M'Crae. Third, A. Wright.

POUTERS (Blue and Red).—Cock.—First, J. Huie. Second, J. Grant. Third and Highly Commended, W. Meff. Very Highly Commended, J. Grant. Hen.—First and Commended, J. Huie. Second, W. Meff. Third, Very Highly Commended, and Highly Commended, J. Grant.

CARRIERS (Any colour).—Cock.—First, F. M'Crae. Second, Mrs. M'Crae. Hen.—Prize, Mrs. F. M'Crae.

TUMBLERS (Short-faced).—First, and Cup presented by W. Meff, Esq., for best pair of Pigeons in any class, J. Huie. Second, J. Huie. Third, J. McDonald. Very Highly Commended, J. Grant. Highly Commended, J. E. Spence, Edinburgh.

FANTAILS (Any colour).—First, J. Grant. Second, W. R. Park. Third, W. E. Smith, Broughty Ferry. Very Highly Commended, J. Morrison, Aberdeen. Highly Commended, J. Sharp. Commended, W. E. Smith.

JACOBS (Any colour).—First, J. Huie. Second, J. Grant. Third, J. Sharp. Very Highly Commended, J. Spence. Commended, W. Meff.

BAKES (Any colour).—First, W. Hendry. Second, J. Sharp.

TRUMPETERS (Any colour).—First, F. M'Crae. Second, Highly Commended, and Commended, W. Meff. Third, J. Grant.

TURBITS.—First, W. R. Park. Second, T. Martin, Edinburgh. Third, J. Sharp. Commended, H. Morrow, Gateshead.

OWLS.—First, T. Spence. Second, J. Grant. Third, C. E. Fisher. Commended, J. Sharp.

DRAGONS.—First, C. E. Fisher. Second, J. Sharp. Commended, W. Scott, Woodend, Stoneywood.

BALDS, BEARDS, OR COMMON TUMBLERS (Any colour).—First, H. Morrow (Bald). Second, J. E. Spence. Third, J. Sharp.

NUNS OR MAGPIES (Any colour).—First, W. R. Park (Nuns). Second, H. Morrow, Durham (Magpies). Third, J. Sharp (Magpies).

ANY OTHER BREED.—First, J. Huie (Lace Fantails). Second and Third, J. Grant (Laborea and Ice Pigeons). Very Highly Commended, J. Sharp. Commended, W. Scott (Starlings).

JUDGES.—Poultry: Mr. R. Teebay, Fulwood, Preston; Mr. A. Paterson, Airdrie. Pigeons: Mr. G. J. Maclean, Edinburgh.

FIFE AND KINROSS ORNITHOLOGICAL SOCIETY'S SHOW.

The following is the list of the awards made at this Show, held at Kirkcaldy on the 4th and 5th inst:—

GAME (Any variety).—Cock.—First, R. Stewart, Kelty. Second, H. Goodall, Kirkcaldy. Third, W. Meldrum, Forfar. Highly Commended, T. Maule, jun., Thornton. Commended, J. Blair, Blairingone, Dollar.

GAME (Reds).—First, J. Stark, Springhill, Crossgates. Second, A. Drummond, Glasgow. Third, J. Penman, Dysart. Chickens.—First, R. Stewart. Second, W. Tait, Heatherlie, Selkirk. Third, W. Meldrum. Highly Commended, J. Lyall, Links; A. Drummond. Commended, H. Goodall.

GAME (Greys and others).—First, S. Young, Newtown. Second, R. Farmer, Links. Third, H. Goodall. Highly Commended, J. Blair. Chickens.—First, H. Goodall. Second, R. Blaik, Raith. Third, L. Chiffelle, Kirkcaldy.

DORKINGS (Any variety).—Cock.—First, A. Drummond. Second, and Third, T. Raines, Bridge Haugh, Stirling. Highly Commended, Hon. Mrs. Montgomery, Cupar; H. Pickles, jun., Earby. Commended, T. Y. Craig, Gallatown. Hens.—First, Third, and Commended, T. Raines. Second, A. Haggart, Leslie. Highly Commended, Hon. Mrs. Montgomery; H. Pickles, jun.; G. Spalding, Kinginnie, Dundee.

COCHINS.—Cock.—First, Mrs. Oswald, Duunkier. Second, W. Beverley, Kirkcaldy. Third, W. R. Park, Abbotsmeadow, Melrose. Hens.—First, Second, and Third, Mrs. Oswald.

BRAHMAS.—Cock.—First, J. A. Dempster, Stirling. Second, T. Raines. Third, D. Normand, Kennoway. Highly Commended, D. Annan, Torr of Moonzie, Cupar. Commended, R. Brownlie; J. Meldrum. Hens.—First, J. Meldrum. Second, R. Brownlie. Third, D. Annan. Highly Commended, T. Raines; Rev. P. H. Money Penny, Pittenweem.

SPANISH.—Cock.—First, Master A. Redpath, Edinburgh. Second, R. Somerville, Edinburgh. Third, J. Craigie, jun., Fordel. Hens.—First and Third, Master A. Redpath. Second and Highly Commended, R. Somerville. Commended, Mrs. Goodall.

HAMBURGS (Spangled).—Cock.—First, J. M'Andrew, Carnoustie. Second, H. Pickles, jun. Third, D. Skeoch, Stewarton. Highly Commended, R. Stewart; R. Dickson. Commended, J. H. Herriot, Kirkcaldy. Hens.—First, J. M'Andrew. Second, Mrs. Keddie, Cowdenbeath. Third, R. Dickson. Highly Commended, R. Stewart.

HAMBURGS (Pencilled).—Cock.—First, W. R. Park. Second, R. Thomson, Kirkcaldy. Third, H. Pickles, jun. Highly Commended, J. Souther, Carnoustie; J. M'Andrew; J. Watson, St. Clairtown; A. Pratt. Commended, A. Pratt. Hens.—First and Second, A. Pratt. Third, W. R. Park. Highly Commended, H. Pickles, jun.

BANTAMS (Any variety).—Cock.—First, J. Mitchell, Perth. Second, A. Mills, Loanhead. Third, A. Drummond. Highly Commended, W.

Brownlie; A. Mills; G. Spalding. Commended, J. Robertson, Burntisland.

GAME BANTAMS (Reds).—First, T. Raines. Second, W. Mabon, Jedburgh. Third, Miss G. Brownlie, Kirkcaldy. Highly Commended, T. Raines; W. Meldrum; G. Spalding. Commended, A. Drummond.

GAME BANTAMS (Greys).—First, Miss Brownlie. Second, J. Leslie, Boglilly. Third, Mrs. Henderson, Flash Mill. Highly Commended, J. Robertson.

BANTAMS (Any other variety).—First and Third, Mrs. R. Frew, St. Clairtown. Second, A. Mills. Commended, J. Rutherford, Nockmarine, Auchtermuchty.

ANY OTHER BREED.—First, W. R. Park. Second and Third, G. W. Boothby, Louth. Highly Commended, A. Small, Glasgow.

SELLING CLASS (Any variety).—First, R. Somerville. Second, L. M'Donald, Keithurdie, Errol. Third, J. Rutherford. Highly Commended, Mrs. Brown, Abercainry; D. Normand, Kennoway. Commended, Mrs. Goodall.

PIGEONS.

TUMBLERS (Almond).—First, J. E. Spence, Edinburgh. Second, J. Bruce, Dunfermline. Third, J. Walker, Kirkcaldy.

TUMBLERS (Any other variety).—First, A. Drummond. Second, J. Bruce. Third, J. E. Spence.

FANTAILS.—First, J. E. Spence. Second, A. Smith, Broughty Ferry. Third, W. R. Park. Highly Commended, A. Smith; J. F. Loversidge, Newark-on-Trent.

POUTERS.—First, J. Bruce. Second and Third, J. M'Gill, Elie. Highly Commended, J. M'Gill; A. Drummond.

ANY OTHER VARIETY.—First, J. Spence. Second and Third, A. Drummond. Highly Commended, J. Bruce; W. R. Park.

CANARIES.

SCOTCH FANCY (Yellow).—Cocks.—First, G. Binnie, Newtown, Perth. Second, D. Sheldrick, Galashiels. Third, D. Duncan, Carron. Hens.—First, G. Spence, Dysart. Second, W. Bonthron, Kirkcaldy. Third, D. Duncan.

SCOTCH FANCY (Buff).—Cocks.—First and Second, D. Duncan. Third, G. Binnie. Hens.—First, D. Kilgour, Crossgates. Second, W. Bonthron. Third, D. Sleight, Falkirk.

BELGIAN (Yellow).—Cocks.—First, J. Kemp, Galashiels. Second, D. Whyte, Leith. Third, A. Sime, Dundee. Hens.—First, J. Kemp. Second, A. Sime. Third, T. W. Worke, Edinburgh.

BELGIANS (Buff).—Cocks.—First, R. Forayth, Edinburgh. Second, J. Elliot, Cowdenbeath. Third, A. Sime. Hens.—First, A. Sime. Second, D. Mitchell, Edinburgh. Third, S. Crawshaw, London.

FLECKED (Yellow).—Cocks.—First, W. Hannay, Granton. Second, D. Sleight. Third, J. Kemp. Hens.—First, W. Bonthron. Second, J. Mullions, Perth. Third, D. Sheldrick.

FLECKED (Buff).—Cocks.—First, J. Hope, Galashiels. Second, C. Milne, Arbroath. Third, J. Kemp. Hens.—First, G. Greig, Edinburgh. Second, W. Hannan. Third, D. Mitchell.

GOLDFINCH MULES (Yellow).—First, J. Robertson, Aberdour. Second, J. and Third, W. Kirk, Dunfermline.

GOLDFINCH MULES (Buff).—First, J. Robertson. Second, A. Fleming, Dysart. Third, W. Kirk.

JUDGES.—Poultry: Mr. R. Teebay, Fulwood, Preston. Canaries: Mr. Robertson, Burntisland; Mr. Mitchell, Perth; and Mr. A. Hope, Kirkcaldy.

THE SHEFFIELD ORIGINAL FANCY RABBIT SHOW.

The members held their fourteenth half-yearly Show on December 28th, when the Rabbits of Mr. W. Allison and Mr. F. Platts were the most successful competitors, as will be seen by the following list of prizes:—

FOR LENGTH OF EARS.—First, W. Allison, 23½ by 5½ inches. Second, F. Platts, 21½, width 5½ inches. Third, W. Allison, 23½ by 5 inches.

BLACK AND WHITE.—First, W. Allison, 22½ by 5½ inches. Second, F. Platts, 21½ by 5½ inches.

GREY AND WHITE.—First, — Moore, 18½ by 4½ inches. Second, — Woolley, 18½ by 4 inches.

TORTOISESHELL.—First, — Strayton, 21 by 5 inches. Second, F. Platts, 18½ by 4½ inches.

SELF-COLOUR.—First, — Platts, 21½ by 5½ inches. Second, W. Allison, 21½ by 4½ inches.

FOR WEIGHT.—First, W. Allison, 8 lbs. 7 ozs. Second, C. Marshall, 6 lbs. 4 ozs.

FOR YELLOW AND WHITE.—First, W. Platts, 18½ by 4½ inches. Second, J. Leigh, 19½ by 4½.

The above are in the young class. The following are in the old class.

ALL PROPERTIES.—Silver Medal, W. Allison (Black Doe), 23 by 5½ inches.

WEIGHT.—Extra Prize, — Frith (Doe), 15 lbs. 6 ozs. Second, — Vane, 14 lbs. 14 ozs.

Messrs. Mangham, Frith and Moore were the Judges. The champion Rabbit, the property of Mr. William Allison, was very much admired.

SUNDERLAND ORNITHOLOGICAL SHOW.

The third Exhibition of the North of England Ornithological Association was held in the Central Hall, Sunderland, on the 6th, 7th, and 8th inst. The following awards were made:—

CANARIES.

NORWICH (Clear Yellow).—First and Second, E. Bemrose, Derby. Third, H. Vine, East Cowes. Very Highly Commended, Moore & Wynn, Northampton. Highly Commended, W. Walter; E. Bemrose; J. Bexson, Derby. Commended, G. E. N. Rawlinson, Gloucester.

NORWICH (Clear Buff).—First, Moore & Wynn. Second, J. Bexson. Third, G. Cummings, Gloucester. Very Highly Commended, R. Mackley, Norwich. Highly Commended, E. Bemrose; R. Mackley.

NORWICH (Evenly Marked Yellow).—First, J. Baxson. Second, E. Bemrose. Third, J. Baxter.

NORWICH (Evenly Marked Buff).—First, Moore & Wynn. Second, H. P. Yeld, Sunderland. Third, R. Hawman, Middlesborough. Highly Commended, R. Heel, Sedgell.

NORWICH (Ticked and Unevenly Marked Yellow).—First, W. Walker. Second, R. Mackley. Third, E. Bemrose. Very Highly Commended, C. H. Angus, Sunderland. Highly Commended, G. E. N. Rawlinson; W. Walker. Commended, Moore & Wynn.

NORWICH (Ticked and Unevenly Marked Buff).—First and Very Highly Commended, E. Bemrose. Second, R. Mackley. Third, J. Baxson. Highly Commended, S. Tones, Northampton. Commended, J. Baxson.

NORWICH (Yellow, with Green, Grey or Yellow Crest).—First, J. Rutter, Sunderland. Second and Commended, S. Tones. Third, W. Walker. Very Highly Commended, Moore & Wynn. Highly Commended, J. Stainesby, Sunderland.

NORWICH (Buff, with Green, Grey, or Buff Crest).—First and Third, J. Young, Monkwearmouth. Second, E. Mills, Sunderland. Very Highly Commended, W. Walker. Highly Commended, Moore & Wynn. Commended, S. Tones.

NORWICH (Evenly Marked Crested Yellow).—First, R. Mackley. Second, J. Hurrell, Sunderland. Third, J. Baxter, Newcastle.

NORWICH (Evenly Marked Crested Buff).—First, G. Shiel, Sunderland. Second, J. Baines, York. Third, J. Baxson.

NORWICH (Ticked and Unevenly Marked Crested Yellow).—First, J. Baxson. Second, W. Walker. Third, W. A. Blakston, Sunderland. Very Highly Commended and Commended, Moore & Wynn. Highly Commended, S. Bunting.

NORWICH (Ticked and Unevenly Marked Crested Buff).—First, Second, and Third, J. Rutter. Highly Commended, W. A. Blakston. Commended, Moore & Wynn; W. Walker.

BELGIAN (Clear Yellow).—First, Second, and Third, J. Rutter. Very Highly Commended, W. Tinline, Galashiels. Highly Commended, H. Bulmer, jun., Stockton. Commended, J. Baxter.

BELGIAN (Clear Buff).—First and Third, J. Rutter. Second, E. Bemrose. Highly Commended, W. Bulmer. Commended, J. Rutter.

BELGIAN (Evenly Marked Yellow).—First, E. Bemrose. Second, J. Rutter. Third, R. Mackley.

BELGIAN (Evenly Marked Buff).—First, J. Rutter. Second, E. Bemrose. Third, R. Mackley.

BELGIAN (Ticked and Unevenly Marked Yellow).—First, Second, and Third, J. Rutter. Very Highly Commended, J. Baxter; J. Rutter.

BELGIAN (Ticked and Unevenly Marked Buff).—First and Second, J. Rutter. Third, J. Baxter. Highly Commended, J. Rutter; J. Baxson.

GLASGOW DUN, or **SCOTCH FANCY** (Clear Yellow).—First, Highly Commended, and Commended, J. Greenlees, Sunderland. Second and Very Highly Commended, G. Nicholson, Newcastle. Third, J. Soulsby, Newcastle.

GLASGOW DUN, or **SCOTCH FANCY** (Clear Buff).—First, W. Alexander, Edinburgh. Second, J. Soulsby. Third, J. Greenlees. Very Highly Commended, G. Nicholson. Highly Commended, W. Brigham, Belford.

GLASGOW DUN, or **SCOTCH FANCY** (Yellow Flecked).—First, W. Alexander. Second, J. Rutter. Third, J. Walker, Durham.

GLASGOW DUN, or **SCOTCH FANCY** (Flecked Buff).—First and Third, J. Cleghorn, Galashiels. Second, J. Greenlees.

YELLOW CINNAMON.—First, S. Tones. Second, R. Hawman. Third, J. Smart. Very Highly Commended, H. Vine. Highly Commended, Moore & Wynn. Commended, E. Bemrose.

BUFF CINNAMON.—First and Second, H. Vine. Third, Very Highly Commended, and Commended, Moore & Wynn. Highly Commended, W. Bulmer, jun.

MARKED YELLOW CINNAMON.—First and Second, S. Hall, Sunderland. Third, Moore & Wynn.

MARKED BUFF CINNAMON.—First and Second, J. Baxter. Third, J. Hurrell. Very Highly Commended, J. Hurrell.

LIZARD (Golden-spangled).—First, H. Ashton, Polefield Hall, Prestwich. Second, G. Tuckwood. Third and Very Highly Commended, E. Bemrose. Highly Commended, W. Walter, Winchester; J. Taylor, Middlesborough. Commended, H. Ashton; H. J. Leach, Middlesborough.

LIZARD (Silver-spangled).—First, E. Bemrose. Second and Commended, H. Ashton. Third, G. Tuckwood, Nottingham. Very Highly Commended, J. N. Harrison. Highly Commended, R. Hawman, Middlesborough.

GREEN.—First, L. Bilcliffe, Newcastle. Second, J. Smart, Newcastle. Third, J. Young. Very Highly Commended, E. Stansfield, Bradford. Highly Commended and Commended, M. Stelling, Willington.

ANY OTHER VARIETY.—First and Second, H. Ashton (Crested Belgian). Third, Mrs. Johnson, Brampton (Crested Belgians). Very Highly Commended, W. Cotton, Middlesborough (Buff Norwich Copy). Highly Commended, Moore & Wynn (Crested Belgian). Commended, Mrs. Johnson (Crested Belgians).

GOLDFINCH MULE (Clean Buff).—First, Second, and Very Highly Commended, J. Young. Third, H. Ashton.

GOLDFINCH MULE (Evenly Marked Yellow).—First, Third, and Very Highly Commended, H. Ashton. Second, J. Young.

GOLDFINCH MULE (Evenly Marked Buff).—First and Third, J. Young. Second, H. Ashton. Very Highly Commended, L. Bilcliffe.

GOLDFINCH MULE (Ticked and Unevenly Marked Yellow).—First, H. Ashton. Second, G. Shiel, Sunderland. Third, E. Stansfield.

GOLDFINCH MULE (Ticked and Unevenly Marked Buff).—First and Third, H. Ashton. Second, G. Shiel. Very Highly Commended, H. Ashton; S. Bunting, Derby. Highly Commended, J. Young.

GOLDFINCH MULE (Dark).—First, J. Young. Second, T. Dolson, Newcastle. Third, J. Gray, Whitby.

LINNET MULE.—First, J. Baxter. Second, Third, and Very Highly Commended, H. Ashton. Highly Commended, Anonymon.

MULES (Any other Variety).—First and Second, H. Ashton (Bullfinch and Goldfinch, Greenfinch and Goldfinch). Third, E. Stansfield (Pied Black and White Goldfinch and Canary Mule).

GOLDFINCH.—Prize, J. Rutter. Very Highly Commended, G. Mills; Moore & Wynn. Highly Commended, W. Barwell, Northampton; W. Walter, Winchester. Commended, W. Petrie, Felling, Gateshead.

LINNET.—Prize, S. Bunting. Very Highly Commended, J. Gibson, Ryhope; W. L. Chapman, Northampton. Highly Commended, M. Stelling. Commended, W. Petrie.

ANY OTHER VARIETY OF BRITISH BIRD.—Prize, J. Gibson (Starling).

Very Highly Commended, E. Bemrose; H. P. Yeld, Sunderland (Bramblefinch). Highly Commended, W. Barwell, Northampton (Black Bullfinch).

COLLECTION OF BIRDS.—First, W. Walter. Second and Third, J. Young. **FOREIGN BIRD** (Any variety).—Prize, J. Gibson (Grass Parakeets). Very Highly Commended, W. Walter (Madagascar Bishop and Rose-breasted Cockatoo). Highly Commended, Miss A. Shiel (Saffron Finch and Diamond Sparrow).

SIX NORWICH IN ONE CAGE (Irrespective of colours).—First, Moore and Wynn (Yellow). Second, W. Walter (Yellow).

SIX CINNAMONS.—First, W. Walter. Second, J. Young.

SIX LIZARDS.—First, H. Ashton. Second, J. Young.

SIX MULES.—First, H. Ashton. Second, No name given.

JUDGES.—Mr. T. Allenby, Durham; Mr. G. Barnesby, Derby; and Mr. T. Clark, Sunderland.

THE NATIONAL PERISTERONIC SOCIETY'S EXHIBITION was held at the Crystal Palace on the 12th. Most of the varieties were well represented. The Short-faced were especially excellent. We purpose publishing a fuller report next week.

ANTWERP PIGEONS.

I HAVE read with much pleasure the notes by the "WILTSHIRE RECTOR" in "our Journal." I noticed especially his complaint about there being "no prize for Antwerps." Glasgow—I might almost say Scotland—is far behind in this fancy. Surely if a class can be formed for, and prizes given to these birds at English shows, the same can be done in Scotland. I believe there are not many in and around Glasgow who know anything of such a breed, and fewer know the points to breed for. As "our Journal" is fast making way here among amateurs, I think you might well devote a corner of it to describing the Antwerps.—AN AMATEUR.

[The Antwerps are described, and a woodcut of one inserted, in Brent's "Pigeon Book," which can be had from our office if you enclose twenty postage stamps with your address.]

JUDGING AND CLASSIFICATION OF RABBITS.

I THINK it is now time that exhibitors of Rabbits should know into whose hands they fall when sending their stock to the various shows, and not be liable to suffer by the mistakes we hear of, and more especially of late. I am glad "ONE OF THE FANCY" took up the subject in this periodical.

I think it only fair that the names of judges should be printed upon each list of prizes offered, so that it may be known if the "right man is in the right place," and not, probably, a judge selected from the town in which the show is held, as was the case at one large show at which I had some stock, and the result was not the most satisfactory to many.

I am, perhaps, one of the largest amateur breeders and exhibitors of all known varieties of Rabbits in the country, and I have been the winner of many prizes; yet I must confess that my Rabbits have made their last appearance at many shows I could name, simply because of the inability of the appointed judges to determine the real points of excellence in the different varieties. A man may be a very excellent judge of Pigeons or poultry, but totally ignorant of Rabbits, yet it frequently happens that he undertakes to pronounce the prize-winners of the whole three portions of the show. An instance in point was at a large show in the north, of which the catalogue of prizes contained classes for Lop-eared, Himalayan, Angora, Silver-Grey, and "Any other variety." Now, could it be thought possible that the first prize in the class last named was given to an Angora, because its owner had entered it in the wrong class, and was, consequently, disqualified from any prize, whilst good specimens of Dutch and Patagonians remained unnoticed, the second prize being given to a Belgian Hare Rabbit? I hope committees will see the advantage of having at least five classes, for if there be that number owners will send, as the comparison of one animal with another of its own kind is the only honest way for competition.—HIMALAYAN.

RABBIT-JUDGING AT LEEDS SHOW.

HAVING in your Journal of the 31st of December read an article respecting the Rabbits at Leeds Show, I think in justice to myself as judge, I must write a line or two in reply. With respect to the Yellow and White Rabbit, to which "ONE OF THE FANCY" refers, it formerly was his property, and he then considered it a very fair specimen, though now in his estimation it seems worthless. As regards the Black and White, it is a

good Rabbit, but short in the ears, measuring only about 20 inches, but it weighs nearly 17 lbs., and is very fairly marked; and when Rabbits are judged for all properties we look at something else besides length of ears. Your correspondent next takes the Self-coloured, and says the first prize was given to a young Blue doe, 21 inches in length, bred by the exhibitor, a poor Rabbit in all properties. Now, he never had hold of the Rabbit, so cannot know much about it. In the first place, it measures 1 inch longer than he says, and I, who have handled it, consider it good in all properties for a young Rabbit, and, which is very praiseworthy, it was bred by the exhibitor, a working man, instead of by one of those gentlemen who give any price for a Rabbit for the sake of gaining a prize. I have been a large breeder and exhibitor, and have been a judge for some years.—THE RABBIT JUDGE AT LEEDS SHOW.

[We have omitted much that accompanied the above, attributing motives to the correspondent who objected to the judging—motives that have no title to consideration in the search after truth. We cannot insert any more communications on the subject.—Eds.]

APIARIAN NOTES.

HONEY SEASON.—1868 has been hardly an average year in this part of Somersetshire, although if our hives had only been in good condition early in May, when the apple blossom, &c., was out, I am persuaded that we should have had a very good early honey harvest. As it was, my own hives were nearly paperised owing to the bad season of 1867 and poor spring of 1868, and in consequence the bees were not sufficiently numerous to spare workers to gather in the honey. Still, I was fortunate enough to obtain a few pounds of very rich honey by the middle of May. By that time all my stronger stocks were in excellent condition, well enriched, and ready to take advantage of the gifts of spring and summer. Then came the continued drought, and the gradual drying-up of the sources of supply, so that by the 9th of July the honey harvest was over. The result of my operations finds me the richer by about 1 cwt. of good honey taken from eight hives, no one hive giving me more than 22 lbs.

SWARMING.—I had only one natural swarm, which issued in the act of my trying to prevent it; but I have heard of a considerable number about me, most of which, however, were lost to their owners. The bees not being hurried in their operations by rapid atmospheric changes, seem to have planned their movements in almost every case long beforehand, and to have carried out their arrangements accordingly. As a rule, continuous fine weather is adverse to the swarming of bees, for, being out every day uninterruptedly for long periods, the hives are not inconveniently crowded, and the necessity of relief from the plethora of population is not felt. My swarms, save the one above-mentioned, were all artificially formed, chiefly by driving, but in several cases by making use of supers in which the queen had been breeding. The earlier swarms have done well, so far as their own prospects for the winter are concerned. The later ones are very poor. A very fine one of May 30th, with a prolific young queen, has only partially filled its box, and has very little honey stored-up.

ITALIANISING HIVES.—I have continued my endeavours to Italianise my apiary, but not yet with full success, owing to the difficulty of eradicating the hybrid taint. Black drones are found in all directions around me, and seem to be ever on the watch, baffling my endeavours to overreach them. Is the English drone more vigorous than the alien? or do drones prefer to seek their brides at a distance from home, and strangers rather than cousins? Earnest bee-keepers, however, will now have every opportunity of success in the establishment of the Italian bee, by following the Koehler process, as detailed at page 141 of the last volume of THE JOURNAL OF HORTICULTURE. Even "before testing it," we are "satisfied as to the efficiency of this process."

ARTIFICIAL AND NATURAL SWARMING.—Simple and efficient as cannot fail to be the lately revealed secret of Mr. Koehler, I am disposed to value still more highly his "second communication," which is certainly very "agreeable to me." I am surprised it should have attracted so little notice, apparently, among the readers of "our Journal," for here is a veritable "royal road" to success in bee-keeping. If I mistake not, it will open a new chapter in the art. I beg the special attention of all practical apiarians to this interesting mode of management, and trust it will receive at the hands of not a few among us a fair trial next summer. Mr. Koehler has far from ex-

hausted the advantages of his new method. In addition to those he has enumerated, is the obvious saving of swarms, for there need be but one risk in a moderate-sized apiary—viz., that of the first swarm's escape. Again, by this process every swarm will be a prime swarm, thus increasing the profit of the apiary a hundredfold. Many other advantages of this system of swarm-management might be enumerated.—B. & W.

BEEES ON OLD CHRISTMAS EVE.

My neighbours and I, after reading your correspondent's assertion that bees hum at twelve o'clock on Old Christmas Eve, determined to see whether it were true or not, and accordingly watched by our respective hives on the nights of the 5th and 6th; but as far as our experience goes, it is all "hum," for everything was perfectly quiet on both occasions, and all I got was a cold. Bees often hum for a minute or so on a winter's evening, I do not know why.—CHARLES ALFRED DUNK.

[Bees would make the same mistake that we do if they celebrated the Nativity in January, for there is little doubt that it occurred in April. However, we celebrate the event, and whether in the right month or not is of little consequence.

Since writing the above, we have received another note from Mr. Wilson. He and some friends listened at hives on Christmas Eve. Some hummed, and others did not; and, we believe, the same occurs every night in the winter.—Eds.]

OUR LETTER BOX.

HAMBURGH PULLET'S DISEASED LIVER (J. Robinson).—We recognise the disease perfectly. It is very common among old hens, and is often accompanied by great swelling of the liver. We have seldom seen it in pullets. Rabbits are very subject to it, but with them it is the cause of great increase of size in the liver. It is a decided complaint of the liver, and where it is not fatal it induces dropsy. We always in these cases shut the birds up, depriving them of water entirely, except a little in the morning and a little in the evening. We feed them moderately giving much bran in their food, and supplying them every day with fresh earth.

DUCKING GAME BANTAMS (Black Bantam).—There are Silver Duckwings, but not Silver-Grey. The difference between the two Duckwings is, the Silvers have white hackles and saddles instead of yellow; they have no chestnut patch on the wing, and the pullets should have no robin breast.

LICE ON CHICKENS (H. T.).—This vermin in poultry are effectually destroyed by thoroughly dusting fowls of sulphur down to the roots of the feathers twice or thrice, with the interval of a day between each two dustings. The best course of procedure, however, when you detect lice in your chickens, is to give them immediate relief by putting a little sweet oil with the finger on the poll of the head and under each wing. Then let them have a dust bath. Thoroughly dry coal ashes are best for this bath, and mix a pound of flowers of sulphur with the ashes."

CROSSING SHORT-FACED WITH AIR TUMBLERS (Cor.).—This cross you mention would produce good birds; but if your Short-faced are very high-bred you will need, perhaps, to make a second cross with the Air Tumblers. Such crossing is very interesting, and for your purpose very desirable. You will obtain well-shaped and pretty-feathered pets, and also good Tumblers.

GOLDFINCH MULE-BREEDING (W. Hay).—"I have ever found that breeding Mules in cages is a better plan than breeding them in a room, for the Goldfinches are of so mischievous a nature that they are not to be trusted with nests or eggs. My plan is to have partition cages with slides, so that you may run in the Goldfinch to the hen required. By this plan I can work three or four hens. I never think of pairing the Goldfinch with a Canary hen in the same way as I would a pair of Canaries. I put the hens up for Mule-breeding early in May, supplying them with boxes or baskets according to fancy, with the requisite building materials. The hens, when they commence building, naturally enough require a mate or Goldfinch being put to them, and this I do every morning while the nests are being constructed, but I never leave the Goldfinches in long, to give them the opportunity of either destroying the nests or eggs. Your not having any young birds from the eggs is not the result of breeding in a cage, but of the Goldfinches not having been in proper condition. I never use a yearling Goldfinch, but a two-year-old bird, and I will guarantee if the hen call for a mate, and such an aged finch is in proper condition, that he will have success. In my promised remarks on Mule-breeding and Mules, I shall enter more fully into particulars on the subject, and I have no doubt they will be of service.—G. J. BARNESBY, Derby."

POULTRY MARKET.—JANUARY 13.

A DAY or two of dry weather have infused a little life into the trade. It was necessary, and will, we hope, last till the depression that has weighed it down for the last six weeks shall have disappeared.

	s.	d.	s.	d.		s.	d.	s.	d.		
Large Fowls.....	3	0	to	3	6	Pheasants	2	6	to	3	0
Smaller do.	2	0		2	6	Partridges	1	6		1	9
Chickens	1	9		2	0	Hares	2	0		2	6
Geese	6	6		7	0	Rabbits.....	1	4		1	5
Ducks	2	0		2	6	Wild do.....	0	9		0	10
Pigeons	0	9		0	10	Grouse	0	0		0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 21—27, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	Days.	m.	s.
21	Th	Royal Horticultural Society, Promenade. SEPTUAGESIMA SUNDAY.	42.9	32.0	37.5	19	56	af 7	27	af 4	0	11	41
22	F		43.3	32.5	37.9	17	55	7	29	4	10	11	57
23	S		43.9	32.7	38.3	18	54	7	31	4	11	12	22
24	SUN	Length of night 15h. 13m.	43.1	32.3	37.7	18	53	7	33	4	15	1	24
25	M		43.3	32.4	37.3	21	51	7	35	4	2	9	5
26	Tu		45.5	32.5	39.0	20	50	7	37	4	3	11	6
27	W		44.6	31.3	37.9	19	48	7	39	4	15	4	27

From observations taken near London during the last forty-two years, the average day temperature of the week is 43.8°; and its night temperature 32.2°. The greatest heat was 56°, on the 25th, 1846; and 27th, 1861; and the lowest cold 15°, on the 25th, 1827, and 27th, 1855. The greatest fall of rain was 0.90 inch.

LICHENS ON FRUIT AND OTHER TREES.

IN many parts of the country the spread of Lichens on trees, which only a few years ago appeared healthy and comparatively free from these parasites, has given rise to doubts whether the improved cultivation of the country, with the consequent removal of large breadths of woodland, may not in some degree have tended to render what remains more susceptible of disease. A specimen has been sent to me by a gentleman, who informs me of the rapid spread of a species of Lichen, of a silver-grey colour, which threatens to cripple the growth of many kinds of forest trees to which it attaches itself, as well as that of Oaks, and Silver, Spruce, and other Firs; and its injurious effects, naturally enough, create alarm in the minds of all interested in such trees. The Lichen is probably an *Evernia*, but instead of following out its botanical characters I will here consider what conditions may have led to its rapid increase of late years, and the means most likely to arrest its progress, or in some degree diminish its ill-effects.

This Lichen, unlike the canal weed (*Anacharis alsinastrium*), which threatened so much mischief twenty years ago or less, is not of foreign origin, for it is, doubtless, the same species as that which has at all times found a home on aged trees when in a declining condition, Apple and other fruit trees being, perhaps, as much affected as any. In no instance, that I am aware of, have attempts to check its growth or destroy it been so perseveringly made as in the case of orchards infested with this parasite, and the partial success attending the means adopted serve as an inducement to resort to them in some of those cases where valuable timber plantations are in danger of dying prematurely: but at least an inquiry into the causes likely to promote the growth of Lichen, and whether such causes are in any degree under the control of the cultivator, may help us to suggest a remedy, more especially if the localities where it has been most troublesome were fairly reported upon. In the meantime, let us judge as well as we can of the case now before us. A short twig of Oak, apparently of the growth of 1865, was completely matted over with this Lichen, forming a coat as long, close, and thick as the coat of a bullock; a small shoot from the twig, 2 or 3 inches long, apparently of the growth of 1866, was free from the Lichen, and a similar growth of 1867, lengthening the shoot to 5 or 6 inches altogether, was also free, but of course stunted in appearance. No doubt this is a bad specimen, but there may be plenty like it; and as I was informed that it was taken from a tree that ought still to have been in its prime, I conjecture some causes have been at work favouring the growth of the parasite to an unusual degree. What these conditions are it would be well to inquire; and in venturing an opinion I may state that I by no means coincide with the view taken by many, that the cause is the land not being drained, for though firmly believing that draining has done an immense amount of good to the country generally, I often think its advo-

cates go beyond the proper bounds in extolling its benefits, and attribute to want of draining evils which ought to be ascribed to other causes. In the case of this Lichen making its appearance in more than ordinary abundance during the last year or two, assuredly non-drainage of the land is not the only reason for its abundance; on the contrary, we often enough see it on trees planted in the driest situations, both as regards soil and atmosphere. Some other cause must therefore exist.

Happening to be near the western coast of England a few months ago, I could not but notice the weather-beaten appearance of the trees and hedges, the former all leaning landwards, and the latter stunted and apparently only dragging on a wretched existence, although the land seemed as good as could be desired, as evidenced by the abundant crops of corn, grass, and Potatoes. The trees and hedges, however, were free, or nearly so, of moss, the bark being cleaner and exhibiting signs of better health than might have been expected; the cause of this was apparent enough—the sea air, laden with saline matter, was not favourable to the growth of this Lichen: hence its non-appearance. On the other hand, in districts which I could point out, where the trees are much more robust, they are affected with Lichen, even in places where damp stagnant air could not be attributed as the cause, for it would be no easy task to obtain water by sinking for it, and the situation, too, both elevated and exposed.

As the air of the coast is so fatal to this parasitical growth, it would be well if we could imitate it elsewhere, but as this cannot be done, our remedy must be something else as unfavourable as possible to the low class of vegetation to which the Lichen belongs, and the most available substance is lime, which, when scattered freely over objects affected with Lichen, destroys it to a considerable extent, and I imagine if the remedy were repeated often enough it would effect a cure. I am not sure that a too hasty removal of the parasite would be advantageous, as probably the bark of the tree would be too delicate to endure all at once full exposure, but a good dusting of quicklime, so as to clog up the Lichen in a sort of limy mass, would form a covering which would fall away by degrees as the season advanced, and the Lichen lost its hold of the tree. This mode of treatment is adopted in the Kentish orchards with benefit. Advantage being taken of a mild moist morning in April, a ladder is set against the tree to be operated on, and a person ascends to the top, scatters over the branches quicklime, which, adhering by the moisture, remains there till it has effected the object desired. Of course, much of the lime finds its way through the branches and falls to the ground, but it does no harm there; on the contrary, it may be useful. The lime, of course, ought to be fresh and good, and if the operation is performed when there is no wind, and the operator ascends above his work, there is not so much difficulty and annoyance from the lime as might be expected, and the destruction of parasitical growth is an object well worth the trial. Even amongst a group of forest trees where their progress is impeded by Lichens, the quicklime application might without any serious outlay be tried, and very likely with advantage.

The foregoing was written before the late dry summer set in, and it is not unlikely the parasitical growth on the trees referred to in the beginning of this communication may have considerably abated, for whatever may have been the advantages or otherwise of the hot dry summer, it has certainly not been productive of the Lichen complained of; on the contrary, I imagine such vegetation to have been less plentiful than it was in the previous year, although nothing had been done to eradicate it. It is not improbable that the greater prevalence of Lichen during the last few years may have been a consequence of our not having had for some time one of those extremely hot seasons which, no doubt, correct abuses and restore the proper balance in nature. It is rather by such changes in the atmosphere as we had last July, that I hope to see this evil abated, than by any application which can be used on a large scale; at the same time, if we can destroy the parasite by using some cheap destructive substance in places where it can be reached we ought to do so, and as lime seems to be the least likely to do harm to other things, I have advised it.

Possibly some other substance—soot, for instance, or a chemical salt, may be found as efficacious as lime, or a wash to be thrown on by an engine might answer. I have often thought of weak salt and water, but I am unwilling to recommend it, as I am not certain that the remedy might not be worse than the disease. Although I have on a small scale tried it without finding any evil arising from it, I would rather that some less dangerous mixture were used, as it is not the portion that falls on the branches of the tree that I fear harm from, but that which reaches the ground, and I am not sure that the latter will do any harm unless the ground is already very stiff and damp, in which case it would, I think, increase the evil, while in soils of a contrary description it may be an advantage.

Should the Lichen I suppose to be an *Evernia* increase instead of diminishing, as I have expressed a hope it would after the past hot season, the subject may again be discussed in these pages. Meanwhile, let those who are the greatest sufferers and have the means of trying any of the remedies mentioned, do so, and report the result, or that attending the use of any other means of destruction that may be cheap, easily applicable on a large scale, and effective. Such has been the alarm caused by the inroads of Lichens on trees, that any mode of arresting their progress, or destroying them, would be a national boon.—J. ROBSON.

BEDDING PELARGONIUMS.

It may be thought that the merits and demerits of bedding Pelargoniums have by this time been sufficiently discussed; but if a comparison of the notes on this subject be made, it will be found, that although all may agree as to the excellence of certain leading and well-known sorts, yet each one is certain to advance the claims to notice of some other kinds of which mention has not been previously made. If for a moment it be considered how unceasingly varieties are on the increase, it would appear to be almost impossible for any one person to be thoroughly acquainted with the merits of all the kinds sent out; for almost every florist of any standing has his own particular batch of choice novelties, to each of which is attached a fancy price, ranging from two or three shillings to as many guineas. It therefore becomes a somewhat costly affair for anyone who, wishing to keep pace with the times, is tempted by glowing descriptions to invest more largely in novelties than he would otherwise have done. I think it not at all likely that there will be any cessation of this overwhelming increase of varieties, for in this instance it is not altogether a case of supply and demand. A new variety possessing sterling qualities, and offering some new and decided shade of colour, is always certain to command a warm welcome and a ready market; but the great bulk of new kinds being probably the results of the labours of those who make cross-breeding an amusement, and are delighted with their success in producing fair-shaped flowers and passable trusses, such varieties are pushed into the market without sufficient trial or comparison with good standard kinds, causing much disappointment to the purchaser.

In looking through Dr. Hogg's excellent "Gardeners' Year-Book" for 1909, I noticed the startling number of 138 new varieties, under the heading of "Zonal and Bedding Pelargoniums," and the thought occurred to me, How many of these new kinds will be in existence five or six years hence? But

very few, I imagine, for the weeding process must be unceasingly carried on, and, therefore, we cannot have too many notes from those who have collections large enough to make their comparison of sort with sort of value.

It may not be unprofitable if I endeavour here to point out a few of the most desirable qualities in a bedding Pelargonium. First, then, the habit of growth is of the greatest importance. Of course, it will depend very much upon the position which a plant is intended to occupy whether a more or less vigorous growth is desirable; and here I refer strictly to the plant's normal condition, because almost every plant can be forced out of its natural growth by the constant application of stimulants. I should say, then, that the habit of growth which is likely to prove most generally useful, would be that of a plant having sturdy close-jointed wood, of a moderately vigorous character, and with branches so disposed as to produce a spreading yet globular outline. Many of the choicest Nosegay varieties are very faulty in this respect. Next, as regards foliage, there exists a variety of opinions, some liking a plain green leaf with no marking, as in the case of *Christine* and *Lady Rokeby*, while others prefer a leaf having a well-defined zone, such as we have in *Adonis* and *Empress of the French*. Both kinds of foliage are good, but I am inclined to give the preference to those kinds which, having a sufficient mass of blossom to produce a fine effect when seen from a distance, have also an additional charm in their beautiful leaf-markings, which are only discovered on a nearer approach. That this is likely to be the more common opinion of the two I am inclined to think, because in order to enjoy a well-wrought combination of colours it is best to keep at a certain distance from the beds, so that the general effect may be fully realised. I hardly know whether the first delighted gaze at the whole, or the after-stroll among the beds, with the interesting discussion of the many intricacies of foliage and blossom, is the more enjoyable. As to flowers, that kind is the most useful which has them of a decided shade of colour, produces them abundantly in large, bold, compact trusses, borne on stout stems, not too long, but yet of sufficient length to carry the trusses well above the foliage. The petals, in addition to a broad, handsome outline, should possess substance enough to withstand, in some measure, the effects of wet.

Doubtless, many varieties which are unsuitable for bedding purposes prove most useful for the conservatory and vestibules. This applies more particularly to the Gold and Silver Tricolors, numbers of which form charming pot plants, and are perfect gems under glass. These, together with many of the new varieties of *Coleus*, concerning which I am glad to see at last a favourable notice, will form a feature in the conservatory as novel as it is beautiful and effective.

That *Italia Unita* is a slow grower everybody knows, and yet it is far too beautiful to be discarded. It is well adapted for small beds; and if strong plants two or three years old are planted very closely, it forms a pretty bed, and its rich leaf-tints will always render it attractive, though most likely these very markings may cause it to be excluded from any regular design; still it and other choice varieties of a similar character may serve to fill and render interesting many odd beds and borders which would otherwise have to be planted with less meritorious kinds.

I noticed a fine Nosegay variety named *Fire King*, at the June Show at South Kensington, exhibited by Mr. Turner. Its large trusses, large even for one of its class, were of a deep rich crimson scarlet, and if it prove a good bedder it is likely to be extensively grown.

I was much interested by the remarks of "Q. R." in page 437, more especially in the description of *Pearl* and *Miss Kingsbury*, which appear to be desirable varieties. I cannot agree with "Q. R." in his remarks concerning *Le Grand*, for with me it is a splendid variety, producing a rich mass of immense trusses, and having a fine broad petal, which is unequalled in its class. Possibly a difference of climate or soil may be the cause of its inferiority with "Q. R.," as I observe that *Christine Nosegay*, which with me has been very beautiful, is also condemned.

I find that in writing of pink varieties in a former article on this subject I failed to convey my meaning clearly. What I meant to say was, that the cut flowers of *Helen Lindsay* were still unsurpassed for decorative purposes, which was my only reason for including it in my list, as I have never regarded it as possessing the qualities requisite for a good bedder. I entirely agree with "Q. R." as to the superiority of *Maid of Kent*, which I have now grown for two seasons. It has a very

compact, sturdy habit, and produces an abundance of deep pink trusses. It also bore the heat of last summer admirably.—
EDWARD LUCKMURST, *Nyerton House Gardens, Kent.*

CULTURE OF ASPLENIUM SEPTENTRIONALE.

ASPLENIUM ALTERNIFOLIUM, AND ALLOSORUS CRISPUS.

REFERRING to your correspondent Mr. John Bryan's remarks (see page 501), I find that he wishes to know how he can succeed in growing *Asplenium septentrionale*, as with him it lives for one season and then dies. The only way that I have found to grow this little gem successfully, and its lovely sister *Asplenium alternifolium*, is to divide them every season, and treat them like an annual, as they both form several little crowns, which may be divided singly or two or three in a clump, and repotted. The soil I use is peat, with a good addition of silver sand, and plenty of drainage. By this mode of treatment I have grown the above with fronds quite 4 inches in length in 32-pots, both in and out of doors.

I have found *Allosorus crispus* do best when grown in a cool greenhouse. The compost I use for this is old mortar rubbish, peat, and loam, a small quantity, with plenty of drainage. This Fern also does best when young; it can be easily raised from spores, and bears dividing with impunity.

I am rather surprised to hear that Mr. Bryan has never seen any Ferns growing wild in his neighbourhood. I have seen beautiful plants of *Asplenium ruta-muraria* growing on the walls surrounding Audley End by the windmill hill. I trust Mr. Bryan will have no difficulty in finding them, as I have seen and admired them when passing along the road to Saffron Walden.—GEORGE WILLERS, *Cambridge.*

MARÉCHAL NIEL ROSE.

ABOUT two years since much was said for and against this new Rose. We were told by some (those who, perhaps, had the true sort), that it was a vigorous grower and a profuse bloomer; others said it lacked all those essentials, that it was a bad grower, and would not bloom, except under glass. One gentleman informed us that he had been awarded several prizes for that variety, and the plants from which the blooms were taken all grew out of doors. Not having a plant at that time in my possession, and never having seen a bloom, I went to the Manchester Show in 1867, expecting to find it there. I was surprised to find but one solitary bloom in the Show, and that not fully expanded. In March of the same year I paid a visit to Porkington Hall, near Oswestry, the seat of Mrs. Ormsby Gore; I there saw a plant of *Maréchal Niel*, which had been recently planted at the foot of an iron pillar in the conservatory. I paid another visit in May, 1868, and then saw the *Maréchal* in "all his glory," and I would add, with "blushing honours thick upon him." It was bearing seventeen magnificent blooms of immense size and substance; good as *Gloire de Dijon* may be, it appeared like a pigmy by the side of the *Maréchal*, and the fragrance was such that the conservatory, which is large and lofty, together with the adjacent rooms, were pervaded with the delightful odour. The foliage, too, was thick and glossy, several of the leaves measured 5½ inches long and 3½ inches wide.

I was told by Mr. Edwards, the obliging head gardener, that the plant had in the previous year made a shoot 20 feet long, and which, after reaching the top of the pillar, 10 feet high, was bent over, and touched the floor. At the Bath Show one gentleman exhibited 114 blooms.

If the true *Maréchal Niel* is so beautiful, how much it is to be regretted that a good name should be sullied by our having had a worthless Rose palmed off upon us for the true variety. Some say the spurious sort is the result of an accident; but I rather think some of our foreign brethren think there are so many "to be gulled," that they may do a little in that way. I hope as the standard of excellence is better understood by the Rose-loving public, that our continental friends will discover that John Bull will only buy what is really good.—SALOPIA.

PACKING FRUIT, FLOWERS, AND VEGETABLES.

It is always a source of gratification to me when I receive "our Journal;" however tired I may be with my day's work, I soon forget my weariness as I read. I have just perused the article at page 6 on packing fruit, flowers, and vegetables,

and as I have sent a considerable quantity of fruit by rail, and to long distances, very successfully, I will describe the method that I usually adopt.

In sending Grapes to market, it is of great importance that they should arrive at their destination with the bloom uninjured, and as fresh as possible. Some years ago I had charge of a large garden in the south of Scotland, and I grew a great many more Grapes and other fruits than were required for the consumption of the family. I sent them to the Glasgow and London markets, London being twelve hours' ride from our place. I packed my Grapes in large square boxes, somewhat after the shape of tea-chests, a half-hundredweight at a time, sometimes not so much. When the family was in town I used to pack vegetables and flowers in square hampers, and place 12 or 20 lbs. of Grapes in a small box. I used to wrap fine tissue-paper carefully round each bunch of Grapes; I generally put on the paper double. I placed a thin layer of bran over the bottom of the box, then stood the Grapes, placing them bunch after bunch on the end, setting them upright, and filling firmly between every bunch with bran, layer after layer. After the top layer of Grapes was put in, I made the box quite full of bran, so that any shaking or jolting of the train might not injure them. Sometimes I sent a man to collect a quantity of moss, and had it dried, and then chopped up very finely. The chopped dried moss answered as well as bran. I sent off upwards of a hundred dozen of Peaches, Nectarines, Apricots, and Figs; these I packed just the same as the Grapes, only the boxes were made shallower so as to hold about three rows of fruit. I had letters both from my master in London and from the markets, telling me how well they were packed. I hope this communication may lead others to state their experience.—F. P. L.

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

I FEEL bound in honour to defend the *Esperione* Grape. I have been merely waiting to cool down ere I arose in antagonism to "ARCHAMBAUD," who wrote well and truly in his article entitled "Out-of-door Grapes," at page 415, excepting as regards his depreciatory remarks on the *Espiran*, as we must for the future call it, for, truly, it is a Grape of hope! Poor Beaton! I wish he were alive to aid me with his enthusiasm mixed up with so much good practice, for I feel a man ought to be a very Bayard to cross lances with "ARCHAMBAUD." I think he should know good old Donald Beaton became convinced that the Grape he grew was not the *Espiran*. I believe I may lay some claim to his conversion, and also for reanimating this old and famous Grape, which was fast falling into oblivion. There is no mistake about Beaton's eventual opinion. When he found that he was off the scent, and was trying to compare the practice of others with some experiments of his own in out-of-door Grape-growing during the autumn of 1857, I happened to have an *Espiran* Vine against the wall of this house, and each phase that he desired to see under my own experimental observation; so I cut off those branches bodily with their bunches attached, just as they grew and ripened, packed and wadded them, placed them carefully in a large tub, and sent them off to Surbiton, to become food for history, and to be judged and tasted at Willis's Rooms, where the Committee of the Royal Horticultural Society then held their meeting. The upshot was, my practice agreed with Beaton's, but our Grapes differed; mine was the *Espiran* and his the *Frankenthal*. Our letters are too long for publication in this paper, but I will quote his postscript to the next article he wrote after the Show:—"I hereby tender my public and most hearty thanks to Mr. Fenn, the author [I sent my written theory and practice as well], of the following very practical views on the cultivation of out-of-door Grapes, and for the trouble and expense of sending me samples of beautiful and most delicious Grapes from all the modes of pruning described below, which tell their own tale, leaving me no more to say than that the Grapes might pass anywhere as hothouse Grapes."

In a letter bearing date December, 1867, our veteran instructor, Mr. Rivers, wrote me—"If you have any cuttings of the *Esperione* Vine to spare, I should be glad of them. What a valuable Grape it is!" I sent a faggot of cuttings to Sawbridgeworth. In fact, I have been presenting eyes and cuttings of this Grape to persons in all parts of the country for the last seventeen years, and it would greatly assist the determination of its character if those to whom I have presented this Grape would write to you stating their opinions. It is planted largely

in this neighbourhood (Woodstock); and Mr. James Morris, of this town, grows it remarkably fine under glass without artificial heat, and if he go on at the rate he has done of late, he will turn his entire garden into an orchard house! To be sure he is a glazier. He says, that "in Oxford, after purchasers have once tasted the Espiran, they prefer it to the Black Hamburgh," and that is why I could not send "ARCHAMBAUD" some of Mr. Morris's specimens. Had "ARCHAMBAUD" written a week earlier, I would have converted him to a certainty.

As a red-wine Grape, grown against open walls in old England, we have no sort to compare with the Espiran, and that is how I have chiefly recommended it to be grown; nevertheless, I gained first-class certificates at the Royal Horticultural Society's shows at South Kensington in the autumn of 1866 for the Espiran, both as an out-door Grape and as ripened under glass without artificial heat, and I can appeal to many gentlemen who tasted it at the Horticultural Club dinner on the 20th of last October, to speak of its quality as a Grape ripened against open walls.

I think the combat is sufficiently advanced for "ONE FOND OF VINE CULTURE" (*vide* page 465), to allow further grace to his Espiran, and not to uproot it yet. Without considering it any "condescension," I intend again to give the system I adopt in pruning out-door Vines, though I certainly shall not aspire to become "a second Hoare" whilst doing so, nor can I lay claim, like H. S. Watson (page 460), to "five-and-twenty years' standing," but it is longer than I think it wisdom for me to refer back to since I also was complimented by you for out-of-door Grapes, as well as the juice from them.

Let me add my hope to that of the Editors—that Mr. Watson will re-write his successful mode of culture, and let it appear in these pages side by side with mine, for I have not one particle of interest or prejudice, my only desire being that a right conclusion may be arrived at.

Then from Mr. McKelvie (page 497), a fund of further advice will I hope be yet forthcoming; but let me beg of him to strike the Ciotat or Parsley-leaved Vine from his catalogue. It is an inferior Muscadine, a good bearer I grant, and its leaves are curious. The Royal Muscadine is also a great bearer, sets its berries well, and they have a far superior flavour to the former. I consider the latter to be the very best hardy out-of-door white Grape that we grow.

Mr. McKelvie says truly, "there must be much confusion still existing about the Espiran Grape." At page 501, No. 247, I defended the Espiran from the attack of "A SURGEON." I there described how it was by the merest chance I became possessed of the Grape. I was just about to ask your permission for a reprint of the circumstances, when the postman arrived with "our Journal" for the week, and in it another capital paper from "ARCHAMBAUD," which altered my mind, and caused me to furnish you with something new.—UPWARDS AND ONWARDS.

(To be continued.)

RESULT OF THE ROYAL HORTICULTURAL SOCIETY'S EXAMINATION OF GARDENERS.

DECEMBER 8TH, 1868.

NAME.	FRUIT AND VEGETABLE CULTURE.		FLORICULTURE.	
	Certificates.	No. of Marks	Certificates.	No. of Marks
R. Barnes (Chiswick Student).....	—	425	2nd class	630
J. McArdle, ditto	3rd class	620	2nd class	870
Joseph Mersman, ditto	—	860	—	240
W. D. Dickson, Royal Gardens, Kew	1st class	590	3rd class	480
Robert Inglis, ditto	1st class	1280	2nd class	810
R. J. Lynch, ditto	2nd class	1115	1st class	1040
James McGregor, ditto	2nd class	945	3rd class	520
Robert Mearns, ditto	3rd class	575	3rd class	460
Robert Wright, ditto	2nd class	855	2nd class	780
Samuel Fattrell, Royal Horticultural Society, Chiswick	3rd class	795	3rd class	580
J. French, Royal Botanic Society, Regent's Park	—	—	3rd class	580
Walter Johnstone, Eridge Castle Gardens, Tunbridge Wells	3rd class	660	2nd class	860
George Payne, Fairlawn, Acton Green	2nd class	880	2nd class	600

METEOROLOGICAL NOTES AT LINTON PARK, KENT, 1868.

THE past year has been, in many respects, remarkable; an unusually early spring, followed by a very dry summer, with

some exceedingly hot weather in July and the first week of September, favoured the ripening rather than the growth of the various products of the earth. The extremes of the past year, however, have had their parallels. June 15th, 1857, was as hot as any day in 1868; and 1858 was a much drier year, the rainfall being nearly 9 inches less than in 1868, while the coldest day in the past twelvemonth did not approach those which occurred in some former years by about a dozen degrees. At the same time it must be borne in mind that the heat of the past year was more prolonged than usual, and that most of the rain fell in the autumn and winter months, while in 1858 these months were the driest, the rainfall of the summer of that year far exceeding that of the past twelvemonth. But very little more than an inch of rain fell during the two hot months of June and July last; this, and the nearly equally dry period before and after these months, rendered the summer of 1868 a remarkable one.

The accompanying table represents the rainfall in inches and hundredth parts of an inch for each month, as well as the number of days on which it fell, and the number of frosty days, the latter being much below the average.

	Rain in inches.	No. Rainy days.	No. Frosty days.
January	3.65	21	18
February	1.35	12	8
March	1.29	12	12
April	1.21	11	4
May	1.92	6	..
June	0.51	3	..
July	0.63	5	..
August	2.30	12	..
September	2.70	10	..
October	2.07	11	6
November	1.78	12	10
December	5.73	22	4
Total	25.19	137	62

The amount of rain for the year is about the average, but it fell on fewer days than usual, and the number of frosty days is much below the average. The highest reading of the barometer was February 8th and November 13th, 30.27; and the lowest, December 24th, 28.34. The winds, as ascertained at noon each day, were E. 7 days; S.E. 16; S. 73; S.W. 88; W. 46; N.W. 27; N. 53; N.E. 54; and two not accounted for, as being so changeable. These figures represent a less number of days when the wind was from the E. and S.E. than any I have on record. N.W. is also below the average. The rainfall was below that of 1856, 1859, 1860, 1862, 1865, 1866, and 1867, and higher than in the intermediate years from 1855. The year may, therefore, be regarded as an average one in this respect, but, as will be seen by the table, more than one-third of the whole rainfall was in January and December.—J. ROBSON.

NOTES FROM SOUTH AUSTRALIA.

By the last mail I received my usual supply (August month), of your Journal, which after an absence from the old country of sixteen years is a most welcome visitor, and I may say a necessary one, as the various phases of colonial life during that term absolutely demand, when one has at last settled down to home and business, that his rusty experiences should not only be brightened up, but that he should be posted up in the present, I may say marvellous, advancement that has been made in gardening. With this view your Journal is my constant visitor; and I look with no greater pleasure at this distance upon any news received than its monthly contents, connecting me, as it were, with so many names of persons with whom I was familiar during my earlier years in the London nurseries and suburbs.

I noticed in your number of August 13th, that you have an extract from the *Builder* in reference to some large Eucalypti here, and request information on the subject; and as during March and April, 1864, I travelled through the greater part of the Gipps Land country, then "rushed" as a gold field for quartz, and passing the spots there referred to, I have made some extracts from my journal kept during the tour, which may satisfy you upon the point. I may say that the journey was made in company with Mr. Philip Benison, some twenty years ago gardener to Messrs. Angerstein, of Blackheath, and who is now gardener to a wealthy gentleman in this district. Owing to the nature of the country we were about to traverse, we were compelled to convey upon our backs (termed here swags), our tent, axe, provisions, and clothing for a two-hundred-mile journey through country in which there is not a road, and by

bush tracks only, over ranges sometimes rising 1000 feet, and when attaining the summit descending again the same.

After leaving Melbourne we made an excellent passage in the out steamer outside the Heads, and after two-days steaming along the coast we landed at Port Albert, being the nearest point by which we could reach the part of the country we desired to reach.

We left Port Albert by a road which at once attracted our notice from the manner in which it is made. From the whole of the country having been inundated by the sea, no stone or materials are available for road-making in this district; and the roads are formed by first placing a good thick layer of Tea tree (*Melaleuca*), then placing a couple of feet of burned clay upon it, and finally covering with a layer of the surrounding sand. This during the wet weather makes a tolerably good road, we were informed; but at this period a strong, hot, north wind was blowing, and we saw a large portion of a new piece of road blowing away in clouds, and the Tea tree forming the base lying in all directions. After three miles of this sand, the walking upon which can be better imagined than described, we arrived at Tarraville, a Government township beautifully situated upon an alluvial flat, where, we were told, we must diverge and take the bush. We here laid in a stock of provisions. Many of the houses are of bricks, and have neat gardens. I noticed the whole east side of a house covered with *Tasmania manicata*; I was attracted out of my way to it by the blooms, the whole side of the house being one mass of flower. This plant does not succeed out of doors at Ballarat.

At six miles on the Lale road we diverged at a Government clearing, one chain wide and seven miles long, as straight as an arrow. Here we passed through five miles of splendid timber, White Gum, perfectly straight, 5 feet through at 4 feet high, and 70 feet to a branch. Here was Bruden's Creek, though a creek only in name, there being no water in it, although in winter to all appearance a stream of some magnitude. We made a fire and had dinner, having travelled sixteen miles. From this point the ground commences to be hilly. Stringy Bark ranges with Gum flats. The divisions of the growth of the two kinds of timber was so distinctly marked, that at the various points at which we crossed we could look along the line, the white bark of the Gum trees affording a distinctive line to the vision as far as we could see upon either side, the line running very nearly north. At twenty-seven miles we camped for the night, having found an excellent spring, the first from Tarraville; and after a sleep as sound as ever had in London city we breakfasted and packed up, and walked till noon over a varying country of sand hills and Stringy Bark ranges. On the sand hills were some of the finest-foiled *Banksias* I had ever seen; the scrub as usual *Epacris*, *Correas*, *Dillwynias*—nothing particularly attractive. At twelve miles we imagined, or could imagine, we were entering Knole Park in Kent, the scenery was so truly English; the trees, although not good either as timber or specimens, were so well distributed, the country so undulating, and the grass so much like home; and the illusion was completed by a flock of about a thousand sheep in the distance. Here we suddenly came upon a creek, the water as pure and limpid as possible, the vegetation so magnificent that both of us at once said we must stop here. Although this was in 1864, and I have not seen the spot since, and have been through most of the western half of Victoria, I have not seen any place that arrested my attention so much, and so stamped itself upon my memory. From the shepherd we found we were upon Baylis Creek, and that at a short distance was the Station Baylie. This truly, we thought, must be a happy place, with such scenery, such grass, and climate. The stream was running at the rate of a mill stream, and the banks were undulating. The margins, even into the water, were studded with tree Ferns 12 feet high and 20 feet across, various aquatic, and amongst the rushes were wild ducks, native companions, and a pelican or two. After gazing with delight we took off our shoes and bathed our feet, now sore, and camped here for two hours, leaving the spot with regret. We here filled our billies with water, as we fortunately had taken the precaution always to carry them full on leaving a camp, and started. Having delayed so long at Baylis Creek night overtook us, and we lost our track; but after some hours' walking, being directed by the bleating of some cattle, we made Rosedale (forty-seven miles), a Government township. This we did not intend to see at all, but as it was it turned out for the better.

Rosedale, one of the capitals of Gipps Land, consists of two hotels, and about two dozen houses. Apparently one person of each trade is there. The Rosedale Hotel is a very fine

building, the stables, I was informed by the landlady, had cost £900 in building. We availed ourselves of the hotel for the night, and on the following morning we replenished our stock of provisions, and started again upon the road, or, as we say here, on the bush track.

At this point we learnt from old settlers that some excellent scenery and splendid country was to be found by travelling through Stringer's Creeks, and by a new digging about forty miles north of this. We accordingly took a sketch of our road from the description of a bushman, and started for Gabie Town. It being a misty day, and no sun, although travelling by compass, we overshot the track we were directed to make, and after walking about five miles through the scrub we came upon an open plain; in the distance about two miles off, we saw a station, and on going to it discovered it to be the Ridge Mr. McLeod. The day advancing, we took instructions to regain our route, and having returned three miles, found the track. Here we saw 1400 head of cattle just arrived from New England, having been driven a distance of 1100 miles, the journey having occupied six months, and they were in excellent condition. For several miles the country was very swampy, with coarse Sedges, and scrubby Box, and Gum, with ducks and other water fowls.—JAMES DUNCAN, *Victoria*.

[We hope to hear again from this correspondent, and he will be recognised by many of our readers as being formerly of Messrs. Rollisson's, of Tooting; then foreman at Dalkeith with Mr. McIntosh, 1849; then foreman at Thomson's nursery, Hammersmith; and lastly at Lord Overstone's, West Wickham Park, in 1852.]

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

JANUARY 19TH.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Tegg, of Clumber, and Mr. Wells, of Helme Lacy Gardens, sent dishes of Apples for competition; the former Bess Pool, and the latter Ribston Pippin, Scarlet Nonpareil, and Braddick's Nonpareil. Mr. Wells also sent a dish of very handsome Bergamotte Esperen. Seymour Tenlon, Esq., Tenchley Park, Linsfield, Surrey, sent a dish of handsome Oranges, which were sweet but dry. Mr. Sampson, of Yeovil, sent a seedling Apple of firm texture, good flavour, and very juicy. It is a small conical Apple, yellowish, and russety, with a brownish tinge on one side. Mr. Edwards, of Eashing, near Godalming, sent tubers of Potatoes that were dug in September, 1867, and had since been kept out of the ground, and produced a number of smaller tubers from their buds. Mr. Sampson, of Yeovil, sent specimens of Telegraph and Victory of Bath Cucumbers. James Bateman, Esq., exhibited tubers of *Oxalis crenata* obtained in Paris, where they are offered for sale as a *petite legume*. Messrs. E. G. Henderson and Son exhibited a dish of Pear-shaped Gonds, of the size and shape of handsome Winter Nelis, of a rich lemon colour, and of great beauty. It was awarded a first-class certificate. Mr. Earley, of Digswell, sent samples of a very fine triple-curl Parsley, selected by himself, and known as Earley's Selected. Messrs. Reynolds & Co., of Compton Street, sent a Strawberry-supporter invented by the Rev. G. E. Mansell, of Kettering. It is made of galvanised wire, and consists of a simple ring about 8 inches in diameter, supported in the ground by three perpendicular pieces of wire about 7 inches long.

FLORAL COMMITTEE.—This meeting was well attended, and a very good collection of plants was exhibited. Mr. C. Allen, gardener to Capt. Clegg, exhibited two large boxes of cut Camellias; the flowers were hardly expanded. Among them were some handsome varieties. A special certificate was awarded. Mr. Williams, Holloway, received a second-class certificate for *Lycaste Schilleriana*, a singular flower, with olive-green wings and a white centre. He also received a special certificate for his collection of plants, in which were several specimens of the *Solanum capsicastrum*, *Aralia peltata*, *Chamodrops humilis* var., the old and almost-forgotten Orchid *Bonatea speciosa*, and several others. Mr. Helmore, gardener to H. Scrutton, Esq., sent a collection of double white *Primula sinensis*, nothing new, but very neat and compact plants. Mr. Wiggins, gardener to W. Beck, Esq., of Islworth, received a special certificate for a collection of *Cyclamens*; also a special for some fine specimens of *Primula sinensis*. Mr. Downing, gardener to Lord Leodesborough, sent a fine specimen of *Oncidium nebulosum* with two long spikes of flowers—a second-class certificate was awarded it—and of *Lycaste Skinneri*, a very deep rose-coloured variety.

Messrs. Cutbush, of Highgate, brought twenty-five fine specimens of Hyacinths, which were awarded a special certificate. Mr. Thompson, of the South Kensington Museum, sent a very neat collection of British Ferns, which were a great acquisition—a special certificate was given for them. Mr. Baxter, gardener to C. Keiser, Esq., of Broxbourne, exhibited a box of some of the finest cut Camellias ever seen. One variety, named *Kelvingtonia*, was particularly handsome—a white and red flower with extra large outer petals, one of the best Camellias in

cultivation. A first-class certificate was given it. There is some doubt about the name, but the flower was not recognised by any of the members present. The plant came from Guernsey into the possession of its present owner. A special certificate was given the collection.

Mr. Woodward sent *Cattleya Garbrandiana*, which was simply a variety of *C. Trianaei*. Messrs. Veitch sent several varieties of *Phoridium*, one of which, *P. Cookianum variegatum*, it was requested should be sent again, the plants being too young to determine their merits. *Asplenium* sp. from Monte Video, to be named by Mr. Moore, was awarded a first-class certificate. Messrs. Carter sent a pretty collection of plants with variegated foliage, also some cut specimens of new *Colons*. A very well-grown plant of *Phalaenopsis Schilleriana*, from the same firm, was awarded a special certificate, and a special certificate was given the collection. Mr. Forsyth, gardener to Baron Rothschild, Gunnersbury, received a special certificate for a fine specimen of *Phalaenopsis Schilleriana*.

Mr. Sampson, Yeovil, sent cut specimens of the Glastonbury Thorn, with the flower buds fully formed, though not expanded. He also sent some flowers of hybrid *Pelargoniums*, which were very pretty; *Echinatum* and *Miniatum* were the parents. Mr. Green, gardener to W. W. Saunders, Esq., was awarded a first-class certificate for *Agave Bisieriana* *lystrix*; he also exhibited some spikes of a very beautiful scarlet *Salvia*, the specific name of which was not known. Messrs. E. G. Henderson contributed cut specimens of *Cestrum elegans* in fruit and flower, the former the same colour as the flowers, very handsome for decorative purposes. A box of cut specimens of *Camellias* was sent from the gardens at Osborne. These flowers were grown in the open air without any protection, and were very fine both as to colour and size. For these a special certificate was awarded Mr. Toward. Mr. Gibson, of Battersea Park, exhibited four fine specimens of *Senecio Ghiesbreghtii*, very handsome both in foliage and the immense heads of sweet-scented yellow flowers.

SCIENTIFIC COMMITTEE.—W. Wilson Saunders, Esq., F.R.S., in the chair. The greater portion of the time was occupied by an examination of fruit-tree stocks sent by Mr. Rivers, Mr. Scott, of Crewkerne, and Mr. Meston. The collection of Mr. Rivers consisted of the following:—

Group 1.—Apples on the Nonesuch English Paradise stock, with two stocks one year old. The trees are one and two years old, with the exception of the dwarf bushes, which are two and three years old. This stock was raised by Mr. Rivers from the Nonesuch Apple some thirty odd years ago.

Group 2.—Apples on the Broad-leaved English Paradise stock, with two stocks one year old. This stock was raised also from seed the same season as the above, its parentage unknown. Both these stocks are remarkable for their rooting freely at the surface, and giving a robust growth with great fertility.

Group 3.—Apples on French Doucin stocks, one and two years old, the best variety received from France. This kind does not root so freely near the surface in this climate as the English Paradise stock. Two stocks were sent with the trees.

Group 4.—Apples on the French Paradise stock, one and two years old, with two stocks one year old. The trees on this stock are very fertile, but are apt to canker in the stiff cold loams of Sawbridgeworth.

Two Peach trees, Bellegarde and Grosse Mignonne, budded on a kind of White Magnum Bonum Plum. The French Peaches were formerly budded on the White Pear Plum and the Brompton Plum stocks. In France at the present day they are budded on the Black Damask and Myrobalan Plum stocks with no great success, as the stocks do not swell freely. The stock now swells with the scion, and seems likely to supersede all other kinds of Plum stocks for French Peaches.

Stocks.—One Barr Knot, a surface-rooting Apple, forming a very good stock for garden Apple trees.

Two pigmy Paradise stocks one year old, and two miniature Paradise stocks one year old. These were sent to show the tendency of our old kinds of Apples to produce from seed surface-rooting dwarf trees, as several other varieties of like habits have been raised at Sawbridgeworth from seed.

One lateral single cordon Apple tree on the Paradise stock, five years old.

One vertical cordon Apple tree on the same kind of stock, and of the same age.

One lateral single cordon Apple tree on the French Paradise stock, five years old, an imported tree from France.

The three last-mentioned trees had been growing side by side in a stiff, cold, clayey soil.

The opinion of the Committee in regard to the value of Mr. Rivers's two stocks as dwarfing agents was, that in respect of perfection of union, free surface-rooting properties, and the influence they exerted in developing, even in the first year, a profusion of bloom buds, they were excellent stocks.

Mr. Scott, of Crewkerne, sent examples of French Paradise, and of the English Paradise stocks, as supplied by the Surrey nurseryman; and on comparison it appeared that the French Paradise of Mr. Scott and that grown by Mr. Rivers under that name were not identical. At all events there is a very marked difference in the vigour of the trees, and in the mode of rooting; those of Mr. Scott throwing up an abundance of suckers, which those of Mr. Rivers do not. The English Paradise stock sent by Mr. Scott is a much smaller

and less vigorous-growing plant, and exhibits symptoms of canker in consequence of having suffered from frost, a peculiarity we never before knew the English Paradise stock subject to. Mr. Scott also exhibited maiden trees of fine healthy growth, grafted on the French Paradise.

Mr. Meston showed examples of trees worked on the French Paradise, imported from France, exhibiting all the vigour of those sent by Mr. Scott on the same stock, and of those shown by Mr. Rivers on the Nonesuch English Paradise, and the Broad-leaved English Paradise. A double horizontal cordon, also imported from France, was sent by Mr. Meston, the cordons of which corresponded in length and vigour to a single horizontal cordon sent by Mr. Rivers, and which was also grafted on the French Paradise, which was likewise an imported tree, but had not the robust growth of one of Mr. Rivers's single cordons grown on the English Paradise.

The exhibition was altogether a most interesting one; but it was impossible to arrive at the characters which essentially distinguish the different varieties of stocks by what was furnished on an examination of the collection. It was, therefore, unanimously resolved that the collections exhibited be sent to the garden at Chiswick, and there cultivated, with the view of observing the subsequent effects produced by the different stocks, and of growing the stocks themselves, so that an opportunity may be afforded of studying them, not only as regards their horticultural value, but also as to their botanical characters. We hope, therefore, by the treatment they will receive at Chiswick, we may, ere long, be enabled to determine the differences now existing, and to see by the flowers and their fruits what these really are.

GENERAL MEETING.—J. Bateman, Esq., F.R.S., in the chair. A list of donations of plants and seeds having been read, and a vote of thanks to the donors unanimously passed, His Serene Highness Prince Teck, His Highness Haasan Pacha, Viscount Milton, M.P., Lord Alfred Churchill, and several others were elected Fellows. After the Committee awards had been reported, the Rev. M. J. Berkeley observed that there were not any flowering plants calling for special remark except Orchids, which Mr. Bateman would notice, and he would, therefore, at once direct attention to the beautiful Pear-shaped Gourd which had been exhibited by Messrs. E. G. Henderson. This, he said, was one of a little group belonging to *Cucurbita pepo*, and called *Coloquintes* by the French. Any one interested in the subject of Gourds would find the best information in a paper by M. Naudin, in the fifth volume of the fourth series of the "Annales des Sciences Naturelles." After mention had been made of a new Thistle, probably a hybrid, Mr. Berkeley produced some Peach shoots which had been sent to him by a gentleman at Eastbourne, and of which not only the tips but the middle had died off in a seemingly inexplicable manner. Mr. Berkeley, however, considered that this result was attributable to the exceptional weather of last year, in which there was a sudden change from excessive drought to excessive moisture. A seedling *Pelargonium* from Southampton then came under notice, on account of its producing from the stem a web of a curious substance, exactly like that found in drains, and the fibres of which appeared to be adventitious rootlets. A portion of the root of a Telegraph Cucumber which had been propagated by cuttings, was also exhibited to the meeting. This was covered all over with tubercles, which resembled a minute species of Truffle, found in the west of England. These tubercles on being cut open and placed under a microscope exhibited a number of beautiful cells, among which were cysts containing a minute vibrio. The only means of arresting the evil which Mr. Berkeley could recommend, was burning the roots.

Mr. Bateman before touching on the Orchids, directed attention to the beautiful cut *Camellias* from Osborne, and the photographs of the plants on which they were grown. He remembered that many years ago there was a controversy as to whether the *Camellia* is hardy or not, and he believed Dr. Lindley settled that it is hardy, but unless it receive heat it will not flower. The gardens at Osborne were only one of the many instances of the wisdom of the late Prince Consort, and one of his good deeds to horticulture was their establishment.

Mr. Bateman, passing on to the tubers of *Oxalis crenata* exhibited before the Fruit Committee, said that in the shop of M. Chevet, in the Palais Royal, at Paris, which contained a more miscellaneous collection even than Covent Garden, he had seen a number of tubers which he recognised as old friends of thirty years ago. On revisiting the shop some time afterwards he had found that from being fine tubers 2 inches long, they had subsided into such as those before the meeting. On inquiring what they were, he was told they were *Oxalis*, and that they had been grown out of doors in the neighbourhood of Paris. Those who studied the horticultural periodicals several years ago, would remember seeing paragraphs on the *Oxalis crenata* as a rival to the Potato, but like the Arracacha, *Dioscorea batatas*, and others which had been proposed, little more was heard of it. He himself had grown it out of doors and it had only produced tubers as large as peas by the time frost came, but his two original plants had been kept in a warm vinery, and they had afforded him tubers as large as those exhibited. They were cooked, and he had a very lively and pleasant recollection of them; nothing could be lighter, being more like soufflés than anything else, and he had no doubt they were very wholesome. Though *Oxalis crenata* could not be successfully grown out of doors, at least in most parts of the country, it might be tried in orchard houses, and if it succeeded there it would be an important addition to our slender and never-increasing stock of vegetables; for

though the varieties of these are being continually multiplied, additions to the kinds of vegetables grown are seldom, if ever, made. Whilst speaking of M. Chevet's shop, he might mention the magnificent display of Truffles there. It was considered by *gourmets* that the past had been a good Truffle year. To enjoy a Truffle it must be eaten fresh—not more than a week after having been taken from the ground. When at Cannes he had been at a Truffle hunt, and had put a tuber in his pocket; he smelt it every morning for a week, and found that the scent remained for just that time. Those who wished to know what Truffles really are must have them direct from Paris, and eat them fresh.

Mr. Bateman in proceeding to notice the Orchids shown, called attention to an ingenious Orchid basket, the invention of a Mr. Briggs, of Chester. This, he said, if it would endure well and contained no injurious ingredient, would be very desirable, the design being taken from branches of trees, and being in very pure taste. With regard to the Orchids before the meeting, the first he would notice was that most useful of all the Phalenopsis, *Phalenopsis Schilleriana*. Of this, Baron Rothschild's gardener had sent a specimen with between fifty and sixty flowers expanded and unexpanded. Mr. Williams, however, had counted once as many as a hundred flowers on a single plant. He was glad to see Baron Rothschild enlisted among the Orchid-growers. There were also fine examples of the same Orchid from Messrs. Carter. Among novelties they had *Odontoglossum cristatum*, not, however, of very great beauty, and *Lycaste Schilleriana*, of which the same might be said. An *Oncidium* from Lord Londesborough's gardener, though not of great interest, was also noticed on account of that nobleman having taken up the cultivation of Orchids. With reference to *Bonatea speciosa*, he would mention that it would succeed with cool dry treatment in the Mexican house, where it is exceedingly useful.

The Rev. M. J. Berkeley said that as Mr. Bateman had mentioned his name in connection with Truffles, he would remark that we have in this country many species of Truffle, but not *Tuber melanospermum*, which is sold in Paris, the only native one to be seen in our markets being *T. aestivum*. As regards preserving Truffles, the Perigord Truffle would retain a good deal of its aroma in oil, but nothing could be worse than dried Truffles.

The Chairman then announced that the Annual General Meeting would be held on February 9th.

GARDENING IN THE WEST.—No. 4.

I PROCEED to describe the arrangement for growing plants successfully and conveniently in rooms heated by furnaces beneath them, or stoves within them. It must, in the first place, be stated that the coal generally used for these stoves or furnaces is that called anthracite, or stone coal, in Pennsylvania, a sort which seems to have been naturally coked under immense pressure in the bowels of the earth, and which burns with little or no flame, but gives off an intense and long-continuing heat. The improved gas-consuming and self-regulating stoves require feeding but once a-day, and emit no deleterious fumes, requiring very little draught to carry all off, and almost no amount of care. This anthracite coal is the glory of eastern Pennsylvania, as iron is of the centre, and as bituminous coal and petroleum are of the western part of that well-endowed state.

The plants are arranged within the space enclosed between an external window open to the east or south—and of which either the upper sash can be let down, or a covering roof raised up for ventilation when necessary—and an internal one, which opens like a French window for easy access to the plants. Heat is supplied by causing the warm air of the room to circulate through the enclosure, and this circulation is secured by providing two openings, one over and one under the inner window. As the air becomes cooled by contact with the outer window it flows into the room through the lower opening, thus making way for the entrance of the warm air from near the ceiling of the room through the upper opening. The necessary moisture is supplied to the air as it enters in an equally simple and effective manner; the upper opening being made wider than the lower one (as much as 8 or 12 inches deep, according to the capacity of the enclosure), a long narrow trough of zinc is placed so as to rest safely along the bottom of the opening, but in such a manner as to be easily removable when necessary. This is supplied with water, into which a little curtain of open worsted material suspended from the top of the opening dips, so that all the air that enters must pass through its interstices, of course imbuing on its way through a good supply of the moisture which is continually ascending the curtain by capillary attraction. Only a portion of this moisture is carried back into the room; much of it is condensed on the outer glass, where, during cold nights, it forms a thick coat of beautiful and protective frostwork, emulating the beauty of the foliage in elegance and variety of pattern, and almost as useful as an

ordinary shutter in repelling cold. As this coat of ice is dissolved by the beams of the morning sun, the drip is caught in a zinc pan, which also receives any overflow from watering.

In another arrangement embodying the same principles, the inner window and the plant stage are attached together, and are supported on one side by castors to carry the whole smoothly and evenly over the floor, when it is desired to open the case either for access or display; the other side being loosely hinged at top and bottom. Where two windows, as a south and an east one, are at suitable distances and both thus stocked with plants, when the stages are wheeled out towards each other across the intervening angle of the room, the plants on these make, along with those remaining in the windows, quite a display.

The taste of American plant-lovers seems to favour brightness and contrast of colour with symmetry of form. Hence plants that require full light, and such as are symmetrically erect or neatly climbing or wantonly trailing, are more approved than the quiet little denizens of Wardian cases, however neat.

We must next look at things out of doors with our dry-air spectacles, and then go on to the consideration of temperatures more violent than our own.—PENNSYLVANIA.

MR. EDWARD PARKE FRANCIS.—We regret to announce the death of this well-known nurseryman, which took place on the 11th inst. at his residence at Hertford, in which town he had carried on business for nearly forty years.

WORK FOR THE WEEK.

KITCHEN GARDEN.

IF hot dung is sufficiently worked let a seed bed be made forthwith for *Cucumbers* and *Melons*; a two-light frame answers well for the purpose. Cover the dung inside with 6 inches of old and clean-riddled tan, or cocoa-nut fibre refuse, and plunge the seed pots near the glass, taking care, if the bottom heat exceeds 90°, to keep it subdued. Endeavour to have a spare frame or pit for early *Potatoes*; a bottom heat of 70°, that will last for a month, will be ample, and the sooner it dies away after that the better; too long a continuance of bottom heat will draw the haulm. If a frame can be spared sow *Horn Carrots* and frame *Radishes* in alternate rows 3 inches apart; a very slight bottom heat of 65° will accelerate them much. Proceed with successional *Asparagus*: the early beds if kept well lined will do again, or they will make excellent beds for *Potatoes*, or early *Carrots* and *Radishes*. Provide successions of *Kidney Beans* and *Strawberries* as soon as room can be spared for them. Remember that *Strawberries* are best started in pits or frames with a bottom heat of 70° and an abundant supply of air, and may afterwards be removed to the hothouse shelves if necessary.

FRUIT GARDEN.

Fruit trees and bushes may be pruned at once if their pruning has not already been completed. However, where birds are troublesome this work may be left till March. Trees on houses, walls, &c., when pruned, should have enough of wood taken out to prevent crowding. Cut out old diseased branches, and replace them with young ones. Keep the whole tree regular over the space to be covered. Bushes, when pruned, should have their branches kept as upright as possible, cutting out all cross shoots, and taking care to avoid crowding. Cutting out a few old branches every season and replacing them with young ones, keeps the plant healthy and vigorous. Protect newly planted trees with litter over their roots, and secure them against wind.

FLOWER GARDEN.

This will now be desolate unless some means have been devised to supply the place of the summer flowers; perhaps there is no better plan than to keep a supply of small evergreens in pots, which might be done with but little trouble, and these may be plunged in the beds when the flowers are removed. They ought in all cases to be kept together in masses of one kind of plants, as being far preferable, in point of taste, to an indiscriminate mixture. No plant is better adapted for this purpose than the Dwarf British *Furze* (*Ulex nana*), which flowers so generally throughout the winter. Other plants adapted for the same purpose are—*Acubia japonica*, *Buxus sempervirens suffruticosa* (Dwarf Box tree); *Ulex aquifolium* (Holly), green and variegated varieties; *Phillyrea*, several

species; *Erica*, the hardy species; *Berberis aquifolium*, *Ledum* or *Leioophyllum thymifolium*, and *L. palustris*; *Vinca major* (Periwinkle); *Prinos glaber* (Winterberry); *Daphne pontica*; *D. collina*, *D. gnidium*, and *D. cneorum*; *Cupressus* and *Juniperus*, several species; and *Ruscus aculeatus* (Butcher's Broom). A selection made from plants similar to these, and arranged so as to combine a pleasing variety with harmony of effect, would supply all that could be desired.

GREENHOUSE AND CONSERVATORY.

Most operations here should still be performed as early in the morning as possible, in order that the atmosphere and floors may be in an enjoyable state later in the day. Orange trees in tubs are liable to be affected by soot fungus, which should be thoroughly cleared off at all seasons, but more especially now; let the leaves be washed clean with soap and water and a sponge. Decaying leaves or unsightly plants must be kept constantly removed, and their places supplied with fresh material from the forcing pit. In addition to small plants, such as Chinese Primulas, Rhododendrons and Camellias will now be making a good display. Stores of hybrid Roses in cool pits intended for growing in pots for a late display, may now be potted off singly, using one half loam, the other half leaf soil, manure, and charcoal dust. If a warm and moist heat can be obtained, introduce some Fuchsias intended for specimens and for propagation. Keep a mild atmosphere in the mixed greenhouse, and beware of too much night heat. Avoid the application of stimulants; maintain, if possible, all previous growth, but do not encourage any addition to it till the proper season arrives. An average temperature of 45° will be sufficiently elevated.

STOVE.

At this season the inmates of our stoves and greenhouses seem as links to connect the floral season of the past with that of the future. There is not, perhaps, a single feature in the cultivation of plants during the winter in which the amateur is more likely to err, and by reason of which a greater amount of injury is occasioned, than in the application of water, either as a liquid or in vapour; if applied directly to the soil in great quantities, the roots, being at this time inactive, are certain to sustain more or less injury, and if it is applied in excess to the atmosphere in the form of vapour, the exhalations from the leaves of plants will be checked, and in either case the plants will materially suffer. It is difficult to give precise rules for the performance of operations such as supplying moisture; as a general principle, however, with reference to plants in pots, no more water ought to be given at the roots than is sufficient to sustain the energies of the plant; and scarcely any more should be supplied to the atmosphere than arises from the evaporation-troughs on the hot-water pipes, none should be applied by the syringe. Examine carefully trellis plants in pots; those which have received considerable rest and are required to flower in good time should now be pruned, disrooted if necessary, and started on a mild bottom heat. Some of the Passion-flowers, and such plants as *Ipomœa ficifolia*, *I. Learii*, *Pergularia odoratifolia*, &c., answer well treated in this way.

PITS AND FRAMES.

Plants in frames intended for bedding-out in the summer require especial attention to guard against both damp and frost. Such plants should be fully exposed to the air at all times when it can be admitted to them without risk, and they should be kept as dry as possible, never watering them except when absolutely necessary, nor taking off the sashes in damp weather. Coverings sufficient to exclude frost should be duly applied, and should be elevated a few inches from the glass so as to enclose air beneath them, which will act as a non-conductor of heat.—W. KEANE.

DOINGS OF THE LAST WEEK.

OWING to the still prevalent wet weather the work has been for the most part a continuation of that of previous weeks. We will, therefore, make some remarks suggested by our own observation and experience, and the inquiries of various correspondents, as to the evils and the way to obviate the inconveniences of stagnant water.

Stagnant Water.—Water is ever an advantage when it can be kept in its proper place and made to subserve a definite purpose. Water in tanks, reservoirs, and ponds is, therefore, valuable as a makeshift, but as a sanitary agent for plants and men it is not to be compared with that taken from the purling brook or the rapid-flowing river. The greater the decline of

the stream, and the consequent more rapid flow, the purer and the healthier—other things being equal—will the water be, as it will absorb and contain more of the vital air. Last summer we were glad to obtain water in any shape; but some time before our ponds failed it tried some of the men very much, as they used it for watering. All such reservoirs when exposed, however bad, are sure to contain organic matter in the shape of tree leaves swept into them, and these with leaves undergoing a process of decomposition, will less or more make the water fetid and unpleasant. However useful these reservoirs are, it should not be forgotten that if left solely to themselves they in course of time may become the fruitful source of malaria and low fever to the neighbourhood.

Even ground very retentive of water in the neighbourhood of our dwellings becomes injurious and unpleasant, though not in an equal degree to that which is the result of the large festering pond. These ponds of mixed water, as well as yards for stock, so often close to farm houses, would be more injurious than they are but for the fact that the residents spend so much of their time in the open air. Having the ground free from stagnant water near our residences, and in our gardens and pleasure grounds, becomes, therefore, a matter of importance. Into the large subject of draining we do not propose to enter at present, but we merely wish to give a few hints which may be useful to the holders of small gardens which have no connection with any main system of drainage.

Our first remark is, that there are many soils which, from their character and the absorbent and open character of the subsoil, need no drainage, and the expense of draining them would only be thrown away. We are not aware that the greatest rainfall in any part of the country would be injurious to the soil; nay, quite the reverse if the rains freely percolated through it and did not remain stagnant at or near the surface. One inquirer A, has drained his garden 3 feet deep, and with a fall of 1 foot in 30 feet; soil sandy loam, with clay for subsoil; and yet, except after the heaviest rains, no water comes from the drains, and even then very little. He is advised to drain the adjacent meadow, though it seldom seems overmoist. We should say, Let well alone. Most likely the under clay in his garden is mingled with strata of gravel or open marl, and in such a case the superfluous water will disappear without troubling itself to find its way to the drains. Before going to the expense of draining the meadow we would dig holes in it 2 and 3 feet deep. If water stood in the 2-foot holes, and rather deeply in them, we would drain. If hardly any stood in 3-foot holes we should not think of draining. Subsoils are often deceiving. Shafts driven into gravel, sand, or chalk will generally take off much superfluous moisture. Even clay with marl in it is far from being so impervious as clay alone. The breaking of such a subsoil and leaving it—cracking as it were the pan which held the water confined near the surface—will often do much to make the surface soon dry. Even that breaking of the subsoil will cause drains when made to work more freely. Of course we will allow for exceptions; but as a general rule, so far as carrying off stagnant moisture is concerned when water will not stand in test holes, we should be careless of draining, further than disposing of a superfluity of surface water.

B "drained his garden and field some years ago, subsoil clay. The drains ran wall at first, but do not run now; he used semicircular tiles without bottoms. What had better be done, as the meadow even is quite sloppy?" We fear that the drains must be taken up and relaid. The want of soles for the drains is probably the chief cause of failure. The superincumbent weight has sunk the tiles in the clay, and the water-course is thus choked up. A floor of slips should always be laid, and the tiles laid on so as to cross the joints. For want of this precaution, and to save a little in the first instance, we have known large tracts of drained land little better of the drainage in the course of five or six years. Cylindrical tiles, now so commonly used, from 2 inches and onwards in bore, are safer in this respect, as less likely to sink irregularly. All such drains are better if made in the wedge shape, say 2 feet wide at top, and 5 inches wide at the depth of 30 or 36 inches. A few stones, or even spray and branches, over the pipes keep a larger space open and lessen the weight. When turf can be had, as in a meadow, it is well to cut a thick wedge, grass side downwards, and ram it firmly in the opening, leaving a space of 9 inches or so over the tiles. We have known ground drained in this way alone without either tiles or stones, and the water run for many years. A strong earth-arch was thus formed over the narrow opening at the bottom. It would be

true policy, however, to use the tiles. It is often very difficult to open these old drains. The work is often more difficult to do than making fresh ones, and as B placed his drains 36 feet apart, and as tiles are now cheap, we would be inclined to drain the intermediate spaces, and let the old drains alone.

Drains are often stopped up by roots of trees taking possession of them. Circular, or semicircular tiles, or pipes, require merely to be placed end to end. There is no necessity for having other holes in them. Even at the ends where they join it is well to have a piece of tile, stone, &c., placed over them to prevent fine soil entering; but wherever water can percolate, the fine roots of plants and trees will also find their way; therefore, drains should be laid at a distance from trees. We have taken up pipes filled with such a solid mass of Ash, Elm, and Poplar rootlets, that no water could pass, and yet these trees were 50 or 60 feet from the drains. For draining a small extent of ground the common spade and pick answer very well, though when thus made you must have a wide bottom; but for extensive draining operations, and where there is much depth, it will in every way be best to have the proper tools and make the drain in the wedge-shape, with the apex downwards. When for particular purposes, as conveying sewage, bricks are used, we would either use the barrel shape or make the drains square. We have known square brick drains, 6 inches wide and 5 inches deep, carry off great quantities of sewage with hardly any sediment for a great number of years; but just in proportion to the soap water and fatty matter from dishes being thrown down, so there is the greater necessity for having a good-sized cesspool just beyond the water stink-trap, which could be often cleaned out, as that would very much tend to keep the drains clean and in good working order. Nothing so soon furs-up iron pipes, and even round earthenware pipes, as dish-washing and soap water.

C, and he is not the only one we know, is equally unfortunate, having pitched his pretty home on ground at a low level. He never thought of drainage. As good luck would have it, he has nothing under the ground level, even his cellar is on the ground level; but as the nearest outlet he can have, the bottom of a ditch by the side of a road, some 200 yards distant, is only 3 inches below the surface of the intervening ground, he has the greatest trouble even with the necessary sewage, as whenever water accumulates in the ditch, the sewage flows back, and forces itself above ground, and then when in addition there are heavy rains, his little lawn is no better than a stagnant morass. He is becoming alarmed for the consequences to himself and his household, and fears he must part at a great loss with what was obtained with much toil, sweetened with many a vision, now fully realised but for the difficulty of this stagnant water deteriorating the otherwise healthy air about him. Well, the case is a bad one, but not, we think, without remedy. Make the water move, and to a great extent you rob it of the powers to injure which it would have when stagnant. For the sewage near the termination of the drains sink a hole or well as deep as you can go—say 30 or 40 feet, without finding water, more shallow if water should break in, and there let the sewage go in the first place. Very likely, if no water come in until you go down a good depth, you will be little more troubled for years, as if there are any open strata, as gravel or chalk, the water will find a way for itself. In the worst result, the well getting full, why then an iron pump plied for a few hours would send the water into the ditch, and keep the house sewage from returning, and in this case, if the well held the sewage, you might find that anything but useless for the kitchen-garden crops, &c., in summer. If the extent of ground is large, we should prefer another well for receiving by shallow drains the superabundant water, and even then, if there were no porous strata to take the water away, the use of a pump would take off the superabundant supply, and keep the moisture from being stagnant. We cannot, however, just now call to mind the number of cases known to us, where the sinking of a dumb well 30 or 40 feet deep, owing to the open strata the well passed through, was quite sufficient, without the use of a pump for keeping low-lying places quite healthy and comfortable. Even the use of a pump under such circumstances would be a trifling drawback when compared with the loss attendant on disposing of a country residence.

Stagnant water and its evils are by no means confined to the gardens and the outsidcs of residences, even of the wealthy. We need not here allude to what were facts, if they are not facts now—that some of the finest drawing-rooms, &c., in London were piled over what were nothing better than cesspools beneath the kitchen and scullery floors. Too often even in

country houses we have stagnant water producing its pestiferous effects, even amid the most engaging and pleasing appearances.

Plants and Flowers in Rooms.—The rage for cut flowers, and even flowers in vases in rooms, is often doing an evil work. The beautiful, however pleasing, will never make amends for the want of thought and consideration. We have looked with pity at this season at Hyacinths and other bulbs struggling for existence on the tops of mantelshelves and other secluded corners where no direct light could reach them. It is strange how people, in other respects very intelligent, are so slow to realise the simple fact, that direct light is more necessary to plants than even to men. In such places the plants cannot be otherwise than unhealthy, and if in glasses the water soon becomes putrid. In a window, or fully exposed to light, the water remains longer sweet, as the healthy growth exercises a purifying influence. A little charcoal or camphor in the water causes it to keep sweet longer; but there is no sure cure against putridity, except frequent changing of the water, applying it at a temperature the same, or at the lowest as high as the general temperature of the room. We have frequently seen Hyacinths so profusely scattered in glasses in a room as to render the atmosphere next to unbearable, not so much from the aroma from the flowers as from the odour of the putrid water in the glasses. There is this advantage from having plants in pots in rooms, that so long as the drainage is good there is no annoyance from stagnant water, and the more especially if water is not allowed to stand long in the saucers.

Cut flowers are another fruitful source, though little thought of, of malaria in rooms. Very soon the bottom of the stalk begins to decay, and from that moment the stagnant water begins to exercise the influence of a pestiferous morass. Changing the water at least every day, is the chief means of preventing the unseen annoyance. Putting a little charcoal in the water will do good, and to keep the flowers long they should be taken out, and a small piece nipped off the stalk, so that a fresh piece will be presented to the water. A lady, a friend of ours, used to keep flowers fresh by this means for four, and even in some cases for six weeks, whilst her neighbour could not keep the same flowers for a week. This unseen evil, from great quantities of cut flowers, arises from the fact, that the person who puts them into vessels of water never thinks more about them until the flowers decay. We have no hesitation in stating, that a dozen such vessels of cut flowers in a room left uncared for, would be sufficient to bring on low fever. Often in our own experience, when such vessels have been sent to be emptied and refilled, we have had to ask others less annoyed by ill scents to perform for us the emptying process. All admirers of cut flowers may soon satisfy themselves of the truth of this statement. As a less evil, when the regular attendance could not well be given, we used pure sand saturated with water, instead of water alone; but that, too, though keeping sweet longer, would become ere long oppressively fetid if there were no outlet for the moisture.

We have said that plants in pots will be free from these objections so long as water does not remain long in the pots and in the saucers. The earth acts a purifier, and the water has no chance of becoming putrid. To our eye, however, there is hardly anything more out of place than common garden pots in finely furnished rooms, or on staircases, &c. Hence we have recommended that all pots so used should be concealed in vases, boxes, &c., of an ornamental and artistic character, so as to be in harmony with the general furnishing of the apartment. Either when single pots are thus placed in small vases, or a number of pots are put into a larger vase, and covered with fine green moss, an effect is produced that could never be approached by single plants in pots, however numerous. Just now, for instance, think of an elegant vase, whatever its composition—say 2 feet in diameter, in front of a window, centred with Hyacinths, banded with Tulips, and edged with Crocus, and judge if any combination of scattered pots would equal it in effect. In advocating such combinations in rooms, and thus rendering cut flowers less necessary, there is one thing, however, we have nearly forgotten to allude to prominently, and that is either to water so carefully as to have no surplus water, or to have means by drainage and a device for catching the water below, by tap or otherwise, for removing the superfluous water, which otherwise would be stagnant. Wherever this stagnant water thus exists to any extent the plants would suffer little in comparison with the human residents of the room. A little while ago we put a Fern growing in a pot into a china vase, with nothing but a

little clean moss beneath the pot, and a little moss over it. The plant was watered with clean soft water for a fortnight. On changing the plant at that time, the smell from the little water accumulated amongst the moss was unbearable. A lady had a vase made of zinc, painted elegantly, and rejoiced in the combinations she was able thus to effect, by means of small flowering-pots, the pots concealed by moss. In a few months, however, she could not make out how the room, notwithstanding the odour of the flowers, had a scent as if there had been the opening of a drain. The vase when fresh done up told too well the cause. A small pipe with tap was fixed close to the bottom of the vase, and about half an hour after watering the water that had found its way through the pots was run off, and there was no more trouble with bad smells. We hope that in future more importance will be given to the avoiding of stagnant water, inside as well as outside of our residences.—R. F.

COVENT GARDEN MARKET.—JANUARY 20.

A VERY limited number of buyers have attended during the past week, business being very dull. There is no new feature to report either in the home or the foreign trade. The imports from abroad are much in excess of the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1/2 sieve	1	6	2	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	6	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants.....1/2 sieve	0	0	0	0	Pears (dessert).....doz.	2	6	6	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	4	0	6	0
Figs.....doz.	0	0	0	0	Plums.....1/2 sieve	0	0	0	0
Filberts.....lb.	0	9	1	0	Quinces.....doz.	0	9	1	6
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse.....lb.	6	0	8	0	Walnuts.....bush.	10	0	15	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....6oz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	2	0	4	0
Beans, Kidney.....hd.	2	0	3	0	Mushrooms.....pottle	2	0	0	0
Beet, Red.....doz.	2	0	3	0	Musd.& Cress,punnet	0	2	0	3
Broccoli.....bundle	1	0	2	0	Onions.....bushel	5	0	7	0
Brus, Sprouts.....doz.	2	0	0	0	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	6	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	0	0	0	0
Carrots.....bunch	0	4	0	8	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....bundle	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	1	0	2	0	Rhubarb.....bundle	0	3	1	6
Endive.....doz.	2	0	2	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	0
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bundle	3	0	5	0	Turnips.....bunch	0	6	0	0

TRADE CATALOGUES RECEIVED.

J. Wheeler & Son, Gloucester.—*Wheeler & Son's Little Book, or Select Seed List.*

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds.*

R. Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, &c.*

W. Catbush & Son, Highgate, London, N.—*Catalogue of Select Vegetable, Flower, and Farm Seeds.*

John & Charles Lee, Royal Vineyard Nursery, Hammersmith, London.—*Trade List, Autumn 1868, and Spring 1869.*

T. Sampson, Preston Road and Houndstone, Yeovil, Somerset.—*Catalogue of Vegetable and Agricultural Seeds.—Catalogue of Ornamental Trees and Shrubs, and Fruits.*

TO CORRESPONDENTS.

NOTICE!

NOTWITHSTANDING our oft-repeated request that no private letters be sent to any of our departmental writers, we regret to hear that the communications some of them receive, and particularly "WILTSHIRE RECTOR," have become so numerous, and the expense and trouble incurred in replying to them are so great, that we must beg of our readers to be more considerate. All the gentlemen connected with this Journal have vocations of their own which demand their attention, and it is not fair that they should be subjected to a special private correspon-

dence with the public generally, simply because they give utterance to their views through the pages of this Journal.

We therefore give this notice, that no letters written privately to any of the departmental writers will be answered, and those only will receive any attention which pass through the office in the ordinary way.

BOOKS (Denton).—There is no such book as you name. "The Cottage Gardeners' Dictionary" and Keane's "In-door Gardening" contain together all you require and much more. (James, Leominster).—"The Cottage Gardeners' Dictionary" and "The Garden Manual." You can have them both free by post from our office if you enclose 8s. 10d. in postage stamps with your direction.

GARDENERS' EXAMINATION (J. R.).—Write to Mr. Richards, Assistant Secretary, Royal Horticultural Society, South Kensington, and ask him to send you the printed particulars.

GARDEN PRUNING SHEARS AND SCISSORS (H. J. S.).—Any cutler ought to be able to obtain them. Figures of some are in the "Cottage Gardeners' Dictionary." They are exposed in a cutler's shop window in Fleet Street, and at Messrs. Mosely's, King Street, Covent Garden.

PEAR NOT RIPENING (F. F.).—Your Pear, which we do not recognise, appears to us to be produced by a late blossom, and is not fully developed. Try it another year. Keep the fruit in a place cool and not too dry, and then tell us the result. It seems as if it had been kept in a cold dry place.

FRUIT-WALL TRELLIS (W. T.).—The best and cheapest trellis for a fruit wall is No. 10 galvanised wire, strained horizontally along the wall not more than 4 inches apart, better 3½ inches, so as to course with the bricks; but as yours is a stone wall this is not material. The wires may be about three-quarters of an inch from the wall, or less if there are inequalities, and should be kept at the proper distance apart by galvanised-iron studs driven into the wall, plugging the joints if necessary, so as to better secure the studs. At each end you will require an upright plate of iron, 1 inch by three-eighths of an inch, having at the proper distances eyes for the wires, which are to be secured to these at one end, passed through the iron studs, and then strained and secured to the iron plate at the other end. The wire netting would answer as you propose, but it would be very expensive if well done, and not half so durable as single wires horizontally placed.

LAWN WEEDY AND BARE (Sophy H.).—The lawn, according to your description, is very poor. We advise you, during mild weather from the present time to March to grub up as many of the Daisies and other weeds as possible, and early in the month give it a top-dressing of well-rotted manure two parts, one part loam, and one part sifted ashes, all well mixed and incorporated. The lawn should be well scratched with an iron rake before top-dressing, and a good dressing given, so as to cover the surface about a quarter of an inch thick. Early in April rake it over, and sow the lawn Grass seeds and 8 lbs. of Suckling Clover per acre. Sow on a dry day with a prospect of rain soon falling, roll well after sowing; but do not roll or mow for a month, and then keep the Grass well mown and rolled. If the worms are troublesome water with lime water.

CHERRY TREES OVER-VIGOROUS (T. F. D.).—The trees being very vigorous, we would, as they have been newly planted, cut them back two-thirds their length, but leaving the lowest shoots longer than the upper ones. The cutting-back should be done now in mild weather.

DESTROYING WATER RATS (One Beaten by Rats.).—We do not know of any better way of destroying them than by trapping, baiting with a piece of the Celery, which you say they devour, but we very much question their doing so, as they do not often leave the water far at any season. We think it is the black rat that does the damage, for it is very fond of burrowing in the banks of ponds. It is destroyed by poison or trapping.

HEATING A PROPAGATING HOUSE (Old Soldier).—If your pipes are set 4½ feet above the level of the boiler we cannot perceive why they do not heat the propagating house. Are the pipes in the main range on a similar, or on a higher level? If on the same level the matter is more inexplicable if the main flow and return are the same for both places. If the pipes are lower in the pit, a little nicety of management might be required to check the flow in the other houses before the pit received it in full. We fancy there must be some difference in this respect—that is, if the other houses are well heated. Of course there can be nothing undesirable in having a new propagating house, though we see nothing to prevent the present one answering, and growing Melons in summer if you wish. The boiler ought to heat the whole. In the setting, the bricks might have been nearer than 7 inches, but they must give out the heat they receive, especially if by means of a vacant space behind them. No doubt much of the heat will go up the chimney if you give it free vent, but you must prevent that by the use of the damper; and if at all uncertain, have a damper to go right across the chimney with a hole an inch in diameter in the centre. The damper may then go in as soon as the fire becomes somewhat bright. Your pipes at the bottom of the pit most likely fail to give bottom heat because they are at the bottom. See what is said on this subject by Mr. Fish in page 283 of our last volume.

RHODODENDRON (Agnes).—The specimen sent is Rhododendron catawbiense.

VINE BORDER (P. P.).—In the border you describe, if the turf was at all sweet, no better plan for making a Vine border could be adopted than piling the turf in layers, with brick rubbish and bones in thin layers between them.

STOPPING VINES (T. K.).—As your Vines are in pots we would stop the fruiting shoots one joint beyond the fruit, and the leading shoot when it had made three or four joints. We make this last recommendation on the understanding that you do not value the Vines much after fruiting. When to be used continuously it is advisable to fruit moderately, and secure growth as well as fruit.

WORK AND WAGES (A Young Beginner).—We should say you have quite enough to do, and very little for doing it; but there is such a difference in the mode of doing things. We should almost be sorry if so many houses and a flower and kitchen garden should be thoroughly well kept for 14s. per week.

ASTERS—DOYENNÉ DU COMICE PEAR (*Florist*).—The German or Quilled and the Tasselled or French are the classes generally exhibited. They are to be had of different colours, but not in named varieties. Doyenné du Comice Pear succeeds well as a pyramid in the south of England.

POTTED PEACH TREES IN THE OPEN GROUND (*E. S., Chelsea*).—You may plunge the pots in coal ashes in a dry warm situation during the winter, placing litter over the surface of the pots in severe weather to protect the roots. The trees should be moved in-doors by the time the buds show colour, and ought not to be taken out again until the fruit is ripe and the leaves have begun to fall, the wood being well ripened. You may, however, place them out of doors after the fruit is well set and danger from frost past, keeping them out until the middle or end of August, when they should be placed in-doors or close to a south wall, where they would probably ripen their fruit; but unless your situation is warm you will not find the fruit so juicy and highly flavoured as those from trees trained against a south wall or under glass.

STOPPING VINE LEADERS (*Idem*).—We understand your question to refer to Vines that are partly up the rafters, and furnished with side shoots or spurs a portion of the distance. The leading shoot or main rod should not be stopped until it has reached to within 1 foot of the top of the rafter. The shoots from the spurs ought to be stopped one joint above the fruit; if there be no fruit, stop them above the sixth leaf.

SELECT ROSES (*Idem*).—In your light soil we would have them dwarfs on the Mallet stock, and manure them well with cow dung and bone dust, giving a good handful of the bone dust at planting. Plant Jules Margottin, Lord Macclesley, Senateur Vaisse, John Lloppe, Duc de Rohan, and Charles Lefebvre. If you wish for more free bloomers, then Madame Eugène Verdier, Louis XIV., Grand des Batailles, Comte de Bobrinski, Souvenir de Lady Eardly, and Red Rover.

EARLY-FLOWERING GLADIOLI (*Idem*).—We fear you will find good blooming in June, but the following are in general early bloomers, and will probably answer your purpose:—Addie Souchet, Don Juan, Goliath, Rembrandt, Mrs. Condore, Neumesis, Rubens, Prémices du Montreux, Madame Victor Verdier, Madame Souchet, Gandavensis, Edith, and Comte de Morny. To bloom early they should be planted from the middle of February to the middle of March if the weather is suitable.

CORONILLA GLAUCA (*E. A. G.*).—Its usual time of flowering is at this season (January), though it will sometimes, according to temperature and state of growth, flower earlier. We have had it in bloom from December to March. As your plant is bare and struggling it should be well cut in; keep it rather dry, but not so much as to affect the foliage, for from a fortnight to three weeks, and then cut it to the form required. Keep it rather dry until it begins to grow, then afford moisture, and pot when the young shoots are about an inch long.

COLEUSES FOR GREENHOUSE CULTURE (*Idem*).—We consider C. Marshalli, C. Berkeleyi, C. Murrayi, C. Bausei, C. Wilsoni, and C. Scotti the best of the hybrids for greenhouse culture. The best time to purchase them is in May, unless for some time after you receive them you can give them a gentle heat, as that of a frame over a hotbed, then obtain them in April.

VINE BORDER FORMING—VINES FOR GREENHOUSE (*C. W.*).—We think your border, if made up to the height of the side lights, will be too deep; but you do not say what the depth will be from the level of the pathway, which will, of course, be the level to which the border is to be raised, though it may be raised 6 or 9 inches above that to allow for settling. If you have a depth of 3 feet above the bricks or drainage to the level of the pathway, that will be sufficient for the depth of the border. We would over the 15-inch drainage place a layer of turf, grass side downwards, and then put in the materials for the border, mixing all well together, bones as well as the other ingredients, and lay the compost regularly, but without treading it, and raise it 6 or 9 inches above the intended level. The border should be made at once, and the Vines planted early in March, shaking all the soil from the roots, and spreading these out carefully, and covering them regularly with about 3 inches of fine not very rich soil. The Vines should be procured forthwith, and cut back, so that they will reach to the height of the front lights. If you have plants in the greenhouse the Vines should not be nearer each other than 4 feet, planting the two next the ends 18 inches from the ends. That will give you seven Vines, which we would have three Black Hamburgh, one Lady Downe's if your house is heated, if not, one Trentham Black, two Foster's Seedling, and one Calabrian Raisin, or, if not heated, one Buckland Sweetwater.

LAWN BROWNING IN SUMMER (*J. L.*).—The lawn should be well scratched with an iron rake, and have a little fine soil spread over it in April, and you may then sow over it Suckling Clover (*Trifolium minus*), rather thickly, or at the rate of 12 lbs. per acre. After sowing give another light scratching with an iron rake, and roll well. It should be done in April when the ground is dry, but with an early prospect of rain.

ANTIRRHINUMS (*Idem*).—The old plants if kept the second year should have the old flower stems cut away, leaving none but the young growing parts. It should be done when the plants are making fresh growths. Young plants are preferable to old; therefore, fresh cuttings should be put in every year. Cuttings made this summer will make fine plants for flowering next year.

CENTAUREA RAGUSINA FROM SEED (*Idem*).—If seed is sown now in a hotbed and the seedlings grown in heat, these will make fine plants by the beginning of June. The plants come true from seed, but are not so silvery in foliage as those from cuttings.

SEEDS HOME-MADE (*Idem*).—The seeds you have saved, if the plants were well grown and of a good strain, the seeds being taken from the best only, will produce plants equal to the parents, but we have known them to be superior, and at other times somewhat inferior. Home-saved seeds (except of particular sorts and when there is a good strain), are in general less satisfactory than those purchased from persons who make seed-saving and selling a business.

GRASS EDGING NOT CUTTING CLEAN (*Idem*).—Your grass edgings do not cut clean because the soil is not sufficiently matted with fibres of the grass, or, perhaps, it is light and crumbling. We do not recognise the seeds you have sent us, and not knowing from what part of India you had them, we are unable to advise.

CLERODENDRON BAIFFOURII TO FLOWER IN JUNE (*A Bealey Reader*).—The plant should receive the needful pruning early next month, and

about the middle of the month should be placed in a somewhat higher temperature and rather moist atmosphere, and when it has pushed fresh shoots a few inches long pot it, and place in a mild hotbed if convenient, keeping it moist and shaded for a few days until the plants recover from the potting, being careful not to overwater, but to keep the soil no more than moist until the roots are working freely in the fresh soil. Keep it in a brisk heat of from 60° to 65° at night, and 75° by day, with a rise of from 10° to 15° from sun heat. The plant should be encouraged with a moist atmosphere, and should have plenty of room and unobstructed light, placing it as near the glass as practicable. Water should be given less plentifully from the middle to the end of April, by which time we imagine a good growth will have been made; and then by keeping it dry, but not so as to cause the plant to flag, it is likely a check will be given that will throw it into bloom, which you will soon see by the formation of the buds, and the plant can be retarded or forwarded, so as to flower at the time required.

LAPAGERIA ROSEA PROPAGATING (*H. D.*).—The readiest and best mode of propagating this fine climber is by seed sown early in March in a brisk bottom heat of 75°, and a top heat of from 65° to 80°. It may also be increased by suckers taken off when the plant is beginning to grow. Layers may be made when the shoots are sufficiently long, cutting a slit upwards below a joint, and layering that part into the soil or a pot filled with soil.

COMPOST FOR COLEUSES (*Idem*).—The whole succeed in a compost of two parts turfy loam, sandy rather than strong, and one part each of leaf mould or old cow dung, and fibrous sandy peat, with a free admixture of sharp sand.

AERIDES STEMS (*Idem*).—We admit that it is common to see them with but one stem or shoot, but the greater desideratum is to obtain them dwarf, and the greater the number of stems the larger are the plants, and, of course, the more valuable for every purpose—exhibition or ornament.

TRANSPLANTING STRAWBERRIES (*A Constant Subscriber*).—We would not remove the plants until the beginning of March, and then we would preserve good balls of soil, planting them firmly, and giving a sufficient watering to settle the earth about the roots.

REPOTTING LILIUMS (*Idem*).—They are best repotted every year. It should be done as soon as the stems decay, but in potting do not disturb the roots more than can be helped.

DOUBLE PRIMULAS (*Flora*).—All the double Primulas have been obtained from seed, or are sports from the single varieties. A good double variety does not produce seed; the best double flowers are propagated by cuttings or dividers. There are many very good doubles that are increased in that way, and there are semi-double varieties, both pink and white, that are tolerably constant from seed, which they, of course, produce. It is likely the partially double flowers which you have will seed, and the seedlings will not unlikely produce double flowers, but quite as likely single ones. The seeds of the semi-double varieties are sold by the seedsmen, and this will show to you that the semi-doubles are general. We do not consider the double any improvement on the single, as they are neither so sweet nor so free in growth and flowering.

OLEANDER INFESTED WITH SCALE (*E. C.*).—The insect on your plant is the Oleander scale. Washing with vinegar and tobacco water is of no practical use in promoting its destruction. Wash the plant with a solution of Clarke's Insect-destroying Compound, 3 ozs. to the gallon, applying it to the under side of the leaves with a soft paint brush, brushing it well in, and washing every shoot or stem. Every part must be dressed with the solution, and in two or three days wash the plant thoroughly with a sponge, using the solution as before. No further dressing will be required except on the re-appearance of the scale, which is a pest the plant is not long free from.

POTTED NARCISSUSES ROOTING OUTSIDE (*An Amateur*).—The plants being required for house decoration, you have no alternative but to remove the roots that extend through the pots' drainage holes, which ought to be done at once, before the plants are too far advanced for bloom. It will not do them any material harm.

COLEUS VERSCHAFFELTI FROM SEED (*Idem*).—We think that this Coleus could be successfully raised from seed, but the difficulty is to procure the seed. It should be sown in a hotbed early in March, and treated the same as a tender annual.

SELECT TRICOLOR PELARGONIUMS (*Idem*).—Lucy Grieve, Miss Burdett Coutte, Howarth Ashton, Florence, Lizzie, Sophia Dumaresque, Italia Unita, and L'Empereur, presuming you have Mrs. Pollock and Lady Cullum. Your mode of culture would be first-rate to furnish plenty of fine leaves, which appear to be your object.

LIST OF KITCHEN GARDEN SEEDS (*Rouen*).—We propose in an early number to furnish a list of the best varieties of vegetables, in the hope that it will be of use to others of our readers.

PROCEEDING SEEDS (*M. G.*).—You may procure Henderson's Conqueror Celery and Winningstadt Cabbage through any of the principal seedsmen. We cannot depart from our rule not to recommend dealers.

CONIFERS FOR EXPOSED SITUATION (*Idem*).—The best of all is the Pinus austriaca, and we would principally plant Scotch Fir and Larch—that is, presuming you require them for shelter, and in such positions it is of little use planting unless the trees are close together—not further apart than 4 feet, so as to shelter and protect each other. Without protecting belts of the above, isolated plants or small groups are of little value, and never thrive. A few of the hardiest are—Abies excelsa, A. Douglasii; Cedrus atlantica (argentea); Juniperus communis, J. horizontalis, J. suecica, J. virginiana; Picea nobilis, P. grædia, P. Nordmanniana; Pinus austriaca, P. Benthamiana, P. cembra, P. excelsa, P. Jeffreyi, P. laricio; Taxus adpressa, T. baccata, T. fastigiata; Thujaopsis borealis; Thuja gigantea, T. Lobbi, T. occidentalis, T. plicata, T. Warreana; and Wellingtonia gigantea.

PROTECTING FRUIT TREES (*Amateur*).—Your mode of protection will not answer, but is, nevertheless, good as far as it goes. It is far more important to cover the trees than to protect them at the sides. The side protection is, however, necessary, and you should have it, as you propose the height of the trees, and it need not reach the ground by a foot. Tiffany will answer well, but you must have it over the trees, so as to protect them from descending dews and frosts. The sides may be permanent, but the top should be moveable, and only placed over the trees in case of frost, taking it off by day and putting it on at night. The

side protection may remain until danger to the blossom and fruit be past, then remove all. The plan of protecting the front wall and border will answer well, only the protection must be removed whenever the air is not frosty, putting it on at night and removing it in the morning. The material if left on day and night is apt to make the growths tender; and the fruit often falls when such opaque protecting materials are used and kept constantly over the trees. These likewise fall a prey to insects, and have not so healthy an appearance as those only having the protecting material over them on frosty nights and days.

PEAR GRAFTED ON THE WHITETHORN (*J. Hoyle*).—The Pear will succeed and bear fruit when on the Whitethorn stock, but the latter does not grow sufficiently fast to keep pace with the scion, nor does it supply a sufficiency of sap.

NAMES OF FRUITS (*W.*).—1, Sturmer Pippin; 2, Court of Wick; 3, Golden Pippin.

NAMES OF PLANTS (*G. Williams*).—*Arbutus andrachne*; out of season, but owing to the mildness of the weather not specially remarkable. (*J. S. S.*).—Proves to be *Phymatodes pustulata*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 12th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 6	31.197	30.150	53	35	45	43	S.W.	.44	Clear and frosty; very fine; heavy rain.
Thurs. 7	31.273	30.225	50	41	46	43	N.	.00	Densely overcast; cloudy and overcast; foggy.
Fri... 8	31.409	30.318	56	48	48	44	W.	.00	Densely overcast throughout, very mild.
Sat... 9	30.437	30.366	51	39	44	45	S.W.	.00	Densely overcast and foggy; very dull; fine at night.
Sun... 10	30.260	30.166	44	38	47	45	S.E.	.00	Fine; overcast; very fine, cold wind.
Mon... 11	30.126	30.079	41	37	46	45	S.E.	.00	Densely overcast; very dull; cloudy and overcast.
Tues. 12	30.091	30.016	42	33	45	44	S.E.	.00	Overcast; densely overcast; overcast.
Mean	30.256	30.189	48.14	39.57	46.43	44.14	—	0.44	

POULTRY, BEE, AND PIGEON CHRONICLE.

TRIMMING.

I TILL now really supposed my individual opinions of trimming were quite sufficiently patent to every member of the poultry world, but it now seems your correspondent "Nemo's" case is still an exception. The JOURNAL OF HORTICULTURE and the original "Poultry Chronicle," now incorporated with the former, have, however, from time to time been infallible witnesses of my warmest desire to suppress practices now so long a usage, and calculated rather to injure than improve the public taste for poultry exhibitions, whilst in the latter periodical my article headed "Trimming," was, I know, the first that ever appeared before the public from any writer on the subject.

It has often been said, "the man who purposely shnts his eyes to matters around him is the blindest of us all," and certainly "Nemo" has been either a very careless reader of poultry lore, or is as equally forgetful of what has transpired, as betokened in his somewhat haphazard assertions; for in this Journal of December 24th he writes thus on trimming—that the example has been made of some outsider, some exhibitor of no name or influence; that he does not remember one case where an influential exhibitor has been exposed, though he has seen cases quite as bad, and equally evident. This is a great mistake as to facts, and in distinct disproof I refer him directly through the columns of "our Journal" to the following well-known cases—viz., the Game Bantams at Beverley, so artistically laced together in the tail feathers with black silk; the Buff Cochins at Wellington, Salop, with a tail comprising almost as much of wirework as of natural tail feathers; the Black Bantam pens at Darlington, in which the birds had to fulfil a couple of days' public penance, with one leg washed entirely white, whilst the corresponding leg of each bird was by me permitted to remain with the artificial colour. Again, the White Cochins at Wolverhampton, with extracted falcon hocks; the Black-breasted Red Game cock at Accrington, with deeply-dyed breast feathers to purposely conceal the ruddy natural colour of this part of the plumage; the Silver-spangled Hamburgh pen at Wigton, where a needle had been cruelly embedded in the full length of the comb to keep it upright; and the Black Poland cock at Preston, whose tail was proved to be dyed with indelible marking ink.

The above in the present instance are, however, a quite sufficient exposure of the real importance of "Nemo's" reflections cast upon myself by name as a poultry judge for the neglect of exposure of trimming, though these cases might be easily increased in numbers manifold were it requisite so to do. In every instance these pens were "disqualified" by myself, and where the committee permitted it, during the show a disqualified card by my direction was affixed to each pen. I have at the moment selected these few cases as proving in every instance that the exposure of these fraudulent practices was among those persons only who at the time in part constituted the front ranks of our poultry exhibitors. I cannot of course, now again directly allude to such owners by name, from a proper and innate disinclination on my part to rend open afresh wounds

long since healed that at the time were so deep and profusely bleeding, and brought with them so much bitterness and newspaper controversy. It is worthy of remark that at the outset in every instance, save the one first detailed, "trimming of any kind" was blankly denied, and in most cases in not over-courteous terms either. In the first case, however, the owner as frankly admitted it, but expressed quite a "consolation" from the fact "that both several judges as well as myself had in this way been previously imposed upon, and so he could not now complain of being at length bowled out." In the last-named case, though at first obstinately disclaimed, the dye was entirely removed by chemical appliances, and the exhibitor then in a most indignant manner accused "his man," at the same time protesting his own personal innocence, "equally with the child unborn."

"His man!" Oh, Messrs. Editors, how surpassingly strange is the conduct of those wicked servants, who, without personal interest of any kind, thus spontaneously devote their time—their most strenuous exertions of handicraft and of deception, simply to promote the interests of their employers, whilst the latter continue in the most happy ignorance of such appliances altogether! I have myself, however, no sympathy with such men as real poultry-amateurs, and if "Nemo" will refer to the pages of "our Journal" he will find them invariably exposed.

I as truly regret as any one can do the disgust and mortification that must inevitably ensue to those unfortunate purchasers of such trimmed specimens, when in six or eight weeks afterwards they find that their valued purchases, like some of Madame Rachel's patrons, have not been "made beautiful for ever." But if "Nemo" himself does see so clearly as to safely predicate for the future of trimming, I confess I do not. My own personal and oft-times painful experience proves that, in the present days, the judges of poultry have far too much than too little labour apportioned to them, for when upwards of a thousand pens of poultry (as is frequently the case) have to be looked over during the awards on one of the short days of December or January, there is very little time to spare for the detection of trimming, except in extreme cases. The strain on judges in so limited time is already far too great, and the additional task to them of detecting all cases of trimming in the same space of time amounts to a simple impossibility. Of this I am quite assured, if "Nemo," and some other half-dozen picked associates were themselves to enter upon the thankless task of revealing all cases of trimming, not only would this alone occupy tenfold the time it now takes to award the prizes, but also that even then, not one-half the cases existent would ever be exposed; the fact being simply this—the real adept at trimming is most difficult to detect, but the bungler in this art by the very want of adroitness in his various manipulations leads to his own discomfiture.

Again, I must ask "Nemo," where is the distinct line to be drawn? for wherever trimming is undiscoverable, it necessarily must be permissible, and at the same time, in cases really open to question, surely the accused must have the benefit of the doubt, whether an old offender or otherwise notwithstanding. Why, then, cannot "Nemo" himself at once step into the hornet's nest, as I so frequently have done, and give us a glimpse of his own individual practice and imperturbability? and let me candidly assure him, if he do succeed in effecting a really

radical cure of trimming in all its branches, none will rejoice at the event more than I shall, who have again and again seen it reproduced phoenix-like from its own ashes, when I had vainly conceived its utter annihilation was secured.—EDWARD HEWITT, *Sparkbrook, Birmingham*.

[We rejoice that Mr. Hewitt has thus spoken out—not that we needed any index to his “sayings and doings,” in opposition to fraudulent exhibiting.

New, what would effectually prevent such attempts at deception? We think the following rule in an exhibition schedule would:—“The Judges will disqualify any pen the birds in which they perceive are trimmed or dyed, or in any other way artificially altered. The prizes awarded will not be paid until the exhibition has closed; and if in the meantime any pen is proved to the satisfaction of the Committee to be trimmed, dyed, or otherwise artificially altered, they will place a card upon the pen, pointing out the cause of disqualification, and withhold the prize if any has been awarded to it.” Such a rule would give time for defeated exhibitors to examine the prize pens, and such exhibitors are excellent detectives.—EDS.]

BLACK HAMBURGHES.

THERE are often inquiries in “our Journal” as to the most profitable sort of fowls to keep; and I sometimes wonder that in your editorial replies you never say a word in recommendation of the very valuable but too little known Black Hamburgs. I cannot imagine a more profitable breed. They are very hardy, and as layers they are unequalled, for not only do they lay as many eggs as any of the other varieties of Hamburgs, but their eggs are much larger. Indeed, my Black Hamburgs lay larger eggs than the Dorkings and Cochins, which I keep for sitting. For the table they are all that can be wished—of good size and of most excellent quality. As regards exhibition, also, they are satisfactory, especially for beginners; for their points are easily learnt, and I think they breed truer than most varieties. There is no question as to their beauty; the contrast of the bright red comb, the pure white earlobe, and the lustrous green of the plumage is so striking that no one can help admiring them.

I am glad to see that separate classes for them are springing up at all the larger shows; they are always well filled, and must be remunerative to the committees. They are steadily winning their way into favour, indeed they only require to be better known to become one of the most popular varieties of fancy poultry.—BLACK COCK.

THE VULTURE HOCK IN BRAHMAS.

FROM the time of the commencement of the discussion respecting the vulture hock in Brahmas I have always intended to say a few words about it, but idleness and other impediments have prevented my doing so until the present time.

I do not so very much object to a vulture hock in a Cochin, as the opinion of some of the judges has made it the fashion to do, for some of the best and purest-coloured imported Cochins I have known have worn that now-unfashionable appendage in conjunction with size, delicacy, shape, and other Cochin merits. In Brahmas, however, I object to a vulture hock altogether, as I should suspect with it a cross with the White Cochin. I am sure no one has bred Brahmas with greater purity than I have done, and in all the years that I have bred them (more than fifteen), I have never seen a vulture hock in a single chicken. It would be interesting to Brahma-amateurs to know whether this unquestionable fault appears most in the Light or in the Dark Brahmas.—E. WATTS, *The Ferns, Jersey*.

THE PERISTERONIC AT THE CRYSTAL PALACE.

SOCIETIES for the improvement and exhibition of fancy Pigeons are no modern things; like the fancy itself they are not mere things of yesterday. They arose, I imagine, in this way: After a book had been published which had been received by fanciers as a text book and an authority, as was Moore's, A.D. 1731, owners and fanciers of Pigeons would delight, first to endeavour to bring their birds up to the prescribed standard, and then would like to show them to others who could appreciate them. Thus friends would show their birds to friends; then an assembly of birds would be shown to an assembly of friends. In Moore's day the celebrated Almond and his Short-

facéd brethren were not so very much beyond the better-shaped ordinary English Tumblers, but he was a gentleman destined to rise in the world, and by the year 1764 a standard of his properties was acknowledged and printed separately, and a Society, called the Columbarian Society, was instituted; but I fancy no other variety of Pigeon was then deemed worthy of exhibition. London was the cradle of the Almond Tumbler; in London he rose, improved, and was perfected. Little room he needs. A tender little fellow, he wants no lofty flights in mid-air; no, they would do him harm; but coddle him and treat him like a greenhouse plant, and have him near you, and then you can appreciate his form and feather.

The Columbarian Society lived on, and the Almond was improved by it. All through the last century it existed and flourished. In old Johnsonian times it held its meeting at “The Globe,” in Fleet Street. There he-wigged, short-breeched, shoe-buckled, collarless-coated gentlemen showed their birds; then came a generation of pig-tailed and top-booted fanciers; then a high-coat-collared, metal-buttoned race, with huge bunches of seals at their fobs, and awfully high neckcloths. The owners did not always improve in their appearance, but as a rule the birds did. At length (it was a pity), the old Columbarian Society died, but two successors arose—the Philopisteron and another Columbarian. The two lived for some years, and their members, like sensible people, who know that union is strength, last year determined to combine the two under the title of the “National Peristeronic Society;” and it was to see this Society's first annual Show that I went to the Crystal Palace on the 12th inst.

Pantomimic pleasures, beloved of children, are reigning, as all the world knows, just now at Sydenham: so hundreds of dear little children were on their way to the Palace of Delight—knickerbockered little men and flowing-haired little maids, smiling little chatterers; missis not to-day “in a pet,” nor master “in one of his awful passions,” as nurse calls them; on the contrary, there they were in the railway carriage, chattering happily, and quite unreservedly before their fellow travellers, telling us what they had seen, and where they had been. One little lady told me of her home delights—dolls with frizzled hair, and dolls' houses with wonderful kitchen arrangements. Blessed little sunbeams of children that unless January day, attracting all eyes and ears until *Standard* and *Times* were dropped, and the buoyant chatterers carried even old fogies—wretched old bachelors, I fear—into their world, and the old wicked wizened faces shone again with innocent smiles. But the children, all of us children together, led into the child's world by the tiny's talk, reach that big doll's house, the Crystal Palace. Passing on by courts, and stalls, and theatre, and orchestra, I reach the tropical department, and a turn to the right brings me to the Pigeons. Never could birds be shown to greater advantage—light all round, of course, in the Palace of glass. Large hanging baskets of trailing plants softened the light, and the gentle drip, drip, and splash of the fountain near, fell on the ear pleasingly.

New, good readers, I want you to see this Show by means of my pen-and-ink sketch, and then go and see its successor next year, for it is to be annual. Dismiss from your minds all preconceived ideas; do not think of this as an ordinary show. First, no competition for prizes, therefore not a mere pair of birds in each pen, but in many pens a goodly number, from one dozen to even two. There were about a hundred pens—a dozen additional ones this day—mahogany-framed, with light upright wire bars, light and apacious, on tables hung with green baize, and even green baize floors to the pens. Green tells as well for birds as for pictures. The number of birds was about 800.

First, on the left, I find *Carriers*, exhibited by Messrs. Maynard, Everett, Hedley, Square, Ord, and Wingfield. Some of these birds are the property of gentlemen who do not exhibit for prizes; hence, uninjured by long journeys, they looked beautifully fresh.

Turning at the end of the Carriers to the right, I come to the Short-faced Tumbler row. What Glasgow was in Pouters, this Show was in Short-faces. Their exhibitors were Messrs. Wingfield, Rensiter, Ford, Jones, Esquilant, Jayne, Merck, and Esden. These birds formed the cream of the whole. Fancy, as in Mr. Ford's pen, a stud of twenty-two Almonds of every gradation of feather; alike in variety as Pigeons, yet differing in variety of feather. By this plan of many birds in a pen a mass of feathered beauty was seen, which at no other show is to be seen. The Mottled were also excellent. No words can do justice to the Short-faced Tumblers when you consider the

number and quality. I felt glad indeed that London still held to the beautiful Almond.

Beards, Balds, some of the latter showed in their plumage a feather here and there, which revealed the Almond cross.

The *Pouters* were not numerous, but there were some good birds shown by Messrs. Heath, Volckman, Gresham, Jones, and Tegetmeier. Some of the White Pouters struck me as very excellent. There were also pigmy Pouters shown by Mr. Tegetmeier.

The show of *Barbs* was good and numerous, they belonged to Messrs. Hedley, Jones, Dart, Maynard, Edwards, &c. Some of these birds, as Mr. Hedley's, showed that great judgment had been used in their breeding and matching.

I was pleased to see that a hint of mine, some time since given in these pages, was carried out at this Show. Thus, Mr. Hudson, the exhibitor of whole pensful of *Anticeps*, had placed cards on the pens stating the distances flown by the birds within, and calling special attention to certain birds and their deeds. The distances flown varied from 100 to 300, 399, 730, and even reaching to 735 miles. Singular to say, the public, the ignorant (as to Pigeons) public, were more caught and interested by these cards relating to Pigeon wing-provess than anything else. Crowds were around reading and wondering—crowds who on seeing the Barbs said, "Poor things! what sore eyes they have!" By the way, one little lady, there for the pantomime, said of the Carriers, "They have dipped their heads in bread poultices, I see."

There were pens full of *Rollers*, and Long-faced *Beards*, also of *Dragoons*. I must pause to praise the lovely colour of some of Mr. Jones Percival's Blues. I like colour, and I think all fanciers should regard it much in every class of birds. The *Jacobins* were very beautiful. Those shown by Mr. Jones and Mr. Roys were very lovely.

Where can I find a blot? Nowhere. Pens, and birds, and arrangements were excellent. Many things besides the beauty of the birds made this Show specially pleasant. Thus, we had the public there in crowds to see, admire, learn, and, perhaps, imitate. Then there being no prizes, so no sharp contests, no bitterness, no regrets, and no fear of letters of complaint to follow. Each exhibitor showed the pick of his stud, and in goodly numbers. Such a show of Short-faced Tumblers I never before saw, indicating that modern Londoners, like their forefathers, cultivate and enjoy the fairy queen of Pigeons, the elegant little Almond.

I heg in conclusion to thank the President of the Peristerion Society, Mr. Esquilant, and its Honorary Secretary, Mr. P. H. Jones, for their kindly attentions, and I hope their new Society may flourish as it well deserves.—WILTSHIRE RECTOR.

NEWARK POULTRY ASSOCIATION'S SHOW.

THE Show, held on the 11th inst., was a very great success. The quality of the birds was much better than in those exhibited last year. The Pigeons for quality were not surpassed even by those at Birmingham. Ten silver cups, besides money prizes, were awarded.

SPANISH.—First and Cup, J. F. Dixon, Cotgrave. Second, J. Adkins, jun., Wallall. Third, Burch and Boulter, Sheffield. Highly Commended, C. H. Smith, Radcliffe Lodge, near Nottingham; J. Laming, Cowbrow, Spalding. Commended, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor. (Cup given to a very fair pen of birds. Mr. Laming's pen, perhaps, ought to have stood in a better position. Cock in the second-prize pen wry-tailed.)

DORKINGS.—Cup, Duke of Newcastle, Clumber. Second, H. B. Lingwood, Needham Market. Third, D. C. Campbell, Brentwood. Highly Commended, F. Parlett, Great Baddow; H. Warner, Loughborough; G. Clarke, Long Sutton; J. Hornsby, Grantham. (A good class.)

COCHINS (Cinnamon and Bun).—First, J. Cattell, Birmingham. Second, H. Mapplebeck, Moseley, Birmingham. Third, Mrs. Woodcock, Leicester. Highly Commended, D. Young, Leamington; W. Sandy, Radcliffe-on-Trent. Commended, G. Adrian, jun., Lincoln. (A very good class.)

COCHINS (Any other variety).—First, T. Stretch, Ormskirk. Second, R. Chase, Balsall Heath, Birmingham. Third, S. S. Mossop, Long Sutton. Commended, T. Derry, Gedney; J. Staley, North Collingham; W. F. Checkley & Co., Moulton. (A fine pair of Partridge first, and a grand pair of Whites second.)

BRAHMAS.—First and Third, Mrs. Hurt, Alderwasley, Derby. Second, Duke of Newcastle. Highly Commended, Hon. Miss Douglas Pennant; W. O. Quibell, Newark. (Small class, but very good.)

GAME (Black-breasted and other Reds).—First, Cup, and Third, C. Chaloner, Worksop. Second, R. Swift, Southwell. Highly Commended, H. Savile, Rufford Abbey, Ollerton. (First prize a splendid bird, a fine specimen of Game. A very good class.)

GAME (Duckwings).—First, Duke of Newcastle. Second, C. Chaloner. Third, W. J. Cope, Barnesley. Highly Commended, G. Henfrey, Maplebeck, Newark. (First prize Duckwing Game, an excellent coloured bird; a very good class; the third prize went to a very good upstanding bird, which will be seen again in the prize lists.)

GAME (Any other variety).—First, R. Swift. Second, W. Smith, Dotterfield. Third, C. Chaloner. Highly Commended, J. D. Huswayne,

Nottingham; Miss A. Crawford, Farnsfield. (First prize, Pile Game, a good bird.)

HAMBURGS (Gold-spangled).—First, J. Walker, Knaresborough. Second, J. Laming, Spalding. Third, G. J. Taylor, Huddersfield. Highly Commended, S. & R. Ashton, Mottram; T. May, Wolverhampton; G. J. Taylor.

HAMBURGS (Silver-spangled).—First, J. Laming. Second, J. Walker. Third, J. Fielding, Newchurch.

HAMBURGS (Gold-pencilled).—First and Cup, J. Walker. Second, Burch & Boulter. Third, W. K. Tickner, Ipswich. Highly Commended, W. R. Park, Melrose. (The cup for the best pen in the Hamburg classes went to a good pen of Gold-pencilled. All Mr. Pickles's birds were too late for competition, or would have stood in a good place.)

HAMBURGS (Silver-pencilled).—First, J. Walker. Second, W. R. Park. Third, T. & E. Comber. Highly Commended, G. Clarke, Long Sutton.

HOUDANS.—First and Third, W. O. Quibell, Newark. Second, Mrs. Wilkin, Holborn Hill, Cumberland. (Mr. Quibell's celebrated birds stood first.)

CRÈVE-CŒURS.—First, Mrs. J. Cross, Brigg. Second, Hon. H. W. Fitzwilliam, Westworth Woodhouse. Third, C. H. Smith, Radcliffe. (Small class, but good.)

ANY DISTINCT VARIETY.—First and Second, G. W. Boothby, Louth (Gold and Silver Poland). Third, T. Robertshaw, jun., Illingworth (Andalusian). (First to a good pen of Gold Polands.)

GAME BANTAMS (Black-breasted and other Reds).—First and Cup, R. Swift. Second, J. R. Robinson, Sunderland. Third, W. B. Jeffries, Ipswich. Highly Commended, Rev. G. Raynor, Tonbridge; E. Toder, Little Carlton; T. Wootton, Mapperley, Nottingham; J. Staley, Collingham; Miss Crawford; E. S. Skeels. Commended, J. J. Cousins, Chapel Allerton. (Game Bantams a splendid class. First, we think quite entitled to its position, owing to the first-rate hen, through the cock in the second-prize pen was admitted by the Judge to be one of the finest birds ever seen, but the hen was bad.)

GAME BANTAMS (Any other colour).—First and Cup, A. Person, Colwick. Second, J. Crossland, jun., Wakefield. Third, J. D. Hastwayte, Nottingham. Highly Commended, Mason & Charlesworth, Chesterfield; C. Chaloner; Miss A. Crawford. (A good class.)

BANTAMS (White, Clean-legged).—First, S. & R. Ashton. Second, Rev. F. Tearle, Newmarket. Third, J. Laming. Highly Commended, H. L. Bradshaw, Wakerley, Stamford; J. Staley, Collingham.

BANTAMS (Black, Clean-legged).—First, S. S. Mossop. Second, G. Clarke, Long Sutton. Third, S. & R. Ashton. Highly Commended, A. Storror, Peterborough; J. W. Morris, Rochdale. Commended, J. H. Bradwell, Southwell; J. Staley. (Black Bantams remarkably good, particularly Mr. Pickles's hen, which came too late.)

BANTAMS (Any other variety).—First, M. Leno, Dunstable. Second, Mrs. Woodcock (White Japanese). Third, H. Draycott, Humberstone. Highly Commended, H. Draycott; J. Staley (Gold-faced). Commended, J. Walker, Knaresborough; H. Savile (Japanese Silkies); G. A. Crewe. Etwell. (The first prize Sebrights good. Small class.)

SELLING CLASS.—First, M. Brown (Black Spanish). Second, R. Swift (Gamck). Third, J. Walker (Hamburgs). Highly Commended, H. Eyre, Newark; G. Clarke; W. A. Burrell, Southwell; H. Savile; Miss J. Milward, Newton St. Loe, Bristol; F. Sales, Crowle; F. Eddison, North Laiths. (Exceedingly good.)

DUCKS (Aylesbury).—Prize, F. Eddison. Highly Commended, H. Savile. **DUCKS** (Rouen).—First, R. Swift. Second, J. F. Dixon, Cotgrave, Nottingham. Highly Commended, J. H. Bradwell, Southwell. (Good.)

GEESSE.—First, Rev. G. Hustler, Stillingfleet Vicarage, York. Second, R. Swift.

TURKEYS.—Cock.—First and Third, W. Sanday. Second, R. Swift. (First prize 30 lbs. Third prize, eight and half months old, 24 lbs. *Hens*.—First and Third, W. Sanday. Second, G. R. Pearson, Witham Common. (Good.)

SINGLE GAME COCKS (Any variety).—First, Duke of Newcastle. Second, G. Henfrey. Third, C. Chaloner. Highly Commended, W. Smith, jun., Easthorpe. (Small class but good, particularly the first-prize bird.)

SINGLE GAME BANTAM COCKS (Any variety).—First, G. Doubleday, Upton. Second, J. M. Otter, Newark. Third, E. Toder, Little Carlton. Highly Commended, A. Parsons, Colwick Rectory. Commended, R. Swift. (Moderate class.)

PIGEONS.

CARRIERS.—Cock.—First, G. Charnley, Preston. Second, F. J. Leach, Middlesbrough. Highly Commended, E. Walker; W. R. & H. O. Blenkinsop; F. Crossley, Eiland, near Halifax; F. J. Leach; J. C. Ord-Pimlico. Commended, J. C. Ord. (The first prize was awarded to a splendid Dun; the second to an equally good Black). *Hens*.—First and Second, J. Crossley. Highly Commended, E. Walker; H. Headley, Leicester; W. R. & H. O. Blenkinsop; G. Charnley. (Mr. Crossley took first and second prizes with two very fine specimens, especially the former, which is one of the finest hens ever seen.)

POUTER.—Cock.—First, E. Crossley. Second, E. Leach. Highly Commended, J. Sharp, Johnstone. Commended, C. Bulpin, Bridgewater; F. J. Leach. (Good class. *Hens*.—First, C. Bulpin. Second, F. Crossley (Good class.)

TUMBLERS (Almond).—First, F. J. Leach. Second, J. Fielding, jun., Newchurch. Commended, F. J. Leach. (Good.)

TUMBLERS (Mottled).—First, J. Fielding. Second, F. J. Leach. (Very good Black first; Common Long Reds second.)

BEARDS.—First, J. Fielding, jun. Second and Extra Second, W. H. C. Oates, Besthorpe. Highly Commended, J. Thompson, Bingley; C. Bulpin. Commended, F. J. Leach. (Very good class, first-prize magnificent in head and beak, deficient in colour; second and extra second, very good.)

TUMBLERS (Any other variety).—First, J. Fielding, jun. Second, F. Crossley. Highly Commended, F. J. Leach. Commended, Mrs. J. Cross, Brigg; H. Draycott.

BARBS.—First, F. Crossley. Second, J. H. Ivimey, Lingfield. Highly Commended, W. H. C. Oates; G. Charnley, Preston. (First wonderful-headed bird, but in very bad condition. The cock shown by Mr. Charnley a fine old bird.)

BARB (Any colour).—Cock.—First, G. Charnley. Second, H. Allsop, Birmingham. Highly Commended, W. H. C. Oates. Commended, H. Headley, Leicester; Miss M. Hales, Canterbury. (Second-prize broken-eyed. Mr. Oates sent a remarkable young bird with a perfect eye. Good class.)

JACOBINS.—First, T. & C. Newbitt, Epworth. Second, F. J. Leach. Highly Commended, J. Thompson. (First prize hen splendid. Class generally coarse.)

OWLS.—First, Cup, and Second, J. Fielding. Commended, J. H. Robinson, Winkburn; T. Egglestone, Halifax; Miss M. Hales; F. Crossley. (Mr. Fielding first and second with his old birds. Mr. Crossley's Highly Commended birds very fine but out of condition.)

TRUMPETERS (White).—First and Second, W. H. C. Oates. Highly Commended, C. Bulpin. (The best two hens ever seen. Mr. Bulpin's out of condition.)

TRUMPETERS (Any other colour).—First, W. H. C. Oates. Second, C. Bulpin. (Bad class, except first-prize birds.)

FANTAILS.—First and Cup, T. & C. Newbitt. Second, C. Bulpin. Highly Commended, T. & C. Newbitt; F. J. Leach; H. Yardley; J. Sharpe, Johnstone; J. Staley. Commended, W. R. Park; J. Walker, Newark; T. Martin, Edinburgh; C. Bulpin. (Best class of Fantails ever seen. Many very fine birds were so out of condition as to exclude them from prizes.)

TURKITS.—First and Cup, J. Fielding, jun. Second, C. Bulpin. Commended, H. Mapplebeck, Moseley, near Birmingham. (First-prize very pretty small Blues. Second, good Reds. Many birds were passed over for being marked on the wing. A splendid class.)

ANY OTHER DISTINCT VARIETY.—First, H. Yardley. Second, S. Wyllie, East Mousley (Austrian Pouters). Highly Commended, Duke of Newcastle (Archangels); Miss M. Hales (Spanish Runts); H. Draycott, Humberside (Toy). Commended, H. Headley; F. Sale, Derby (Frillbacks). (A fair class. The third-prize Blue Archangels very pretty, but deficient in bar.)

CANARIES.

BELGIAN.—First, E. Bemrose, Derby. Second and Highly Commended, W. Clark, Nottingham.

LIZARD.—First, E. Bemrose. Second, W. Clark.

MARKED.—First and Highly Commended, W. Clark. Second, E. Bemrose.

ANY OTHER VARIETY.—First, E. Bemrose. Second, W. Clarke. Highly Commended, E. Bemrose; E. S. Smith.

ENGLISH SONG BIRD (Any variety).—First, F. Duke, Newark. Second, E. Bemrose. Commended, E. S. Smith (Goldfinch Mule).

(The Canaries, though not numerous, were of excellent quality and breed, and were judged by Mr. G. J. Barnesby, of Derby.)

JUDGES.—W. B. Tegetmeier, Esq., London; J. Dixon, Esq., North Park, Clayton, Bradford; and — Martin, Esq., Church Cottage, Claines, Worcester.

HANLEY POULTRY SHOW.

This was held on the 12th, 13th, and 14th inst. Subjoined is the prize list:—

DORKINGS (Coloured, except Silver-Grey).—*Cock.*—First and Extra, Dr. D. C. Campbell, Brentwood. Second, Mrs. F. S. Arkwright, Etwell, Derby. Third, Mrs. M. Seamons, Hartwell, Aylesbury. Highly Commended, N. G. Russell, Ludlow; C. Morrison, Holmleigh, Grassendale; J. H. Roper, Barham, Ipswich; J. Martin, Claines, Worcester; L. Patton, Hillmore, Taunton. Commended, H. Lingwood. *Hens.*—First and Extra, Mrs. F. S. Arkwright. Second, Dr. D. C. Campbell. Third, L. Patton. Highly Commended, Mrs. F. S. Arkwright. Commended, Mrs. M. Seamons.

DORKINGS (Any other variety).—Prize, Mrs. F. S. Arkwright. *Hens.*—Prize, J. Mead, Wolverhampton.

SPANISH.—*Cock.*—First, J. Martin, Claines. Second, H. Beldon, Goitstock. Third, Hon. Miss Douglas Pennant, Bangor. Highly Commended, J. Mansell, Longton. *Cockrel.*—First, E. Fell, Burslem. Second, H. Beldon. Third, W. Wooley, Bunbury. Highly Commended, F. Cooper, Hsley; F. & E. Comber, Warrington. *Hens.*—First, H. Beldon. Second, W. Wooley. Third, Hon. Miss Douglas Pennant. Highly Commended, F. Cooper; J. Stephens, Walsall.

COCHIN-CHINA (Cinnamon and Buff).—*Cock.*—First, Extra, and Second, H. Mapplebeck, Moseley, near Birmingham. Third, R. White, Sheffield. Commended, Mrs. A. Woodcock, Rearsby, Leicester. *Hens.*—First, H. Beldon. Second and Highly Commended, H. Mapplebeck. Third, J. Sichel, Timperley.

COCHIN-CHINA (Brown and Partridge-feathered).—*Cock.*—First, R. White. Second, E. Tudman. Third, R. B. Wood. Highly Commended, H. Storey, Derby; J. Burnett; A. O. Worthington, Newton Park, Burton. *Hens.*—First and Extra, T. M. Derry, Gedney. Second, J. Stephens. Third, E. Tudman, Whitechurch.

ABRAHMA POOTRA (Dark).—*Cock.*—First and Extra, J. H. Pickles, Southport. Second, W. B. Etches, Whitechurch. Third, L. Poyton, Knypersley. Highly Commended, Hon. Miss Douglas Pennant; J. Heath, Nantwich; W. Dring, Faversham; C. L. Morris, Warrington; J. H. Pickles. Commended, A. O. Worthington, Burton; Hon. Miss Douglas Pennant. *Hens.*—First and Extra, A. O. Worthington. Second, J. Heath. Third, E. Leech, Rochdale. Highly Commended, Hon. Miss Douglas Pennant; Rev. E. Alder, Etwell, Derby; J. H. Pickles. Commended, W. D. Etches, Whitechurch.

ABRAHMA POOTRA (Light).—*Cock.*—First, A. O. Worthington. Second and Third, J. Pares, Postford. *Hens.*—First, H. Dowsett, Pleshey, Chelmsford. Second, A. O. Worthington. Third, E. Leech. Commended, J. Pares.

POLISH (Any variety).—*Cock.*—First, H. Beldon. Second, J. Heath. Third, P. Unsworth. Highly Commended, T. Dean, Kighley; P. Unsworth. *Hens.*—First, H. Beldon. Second, P. Unsworth. Third, J. Heath.

CRÈVE-CŒUR.—*Cock.*—First, Col. Stuart Wortley, London. Second, H. Beldon. *Hens.*—First, Col. Stuart Wortley. Second, R. P. Wood, Uttoxeter. **HOUDAN.**—*Cock.*—First and Second, J. Drewry, Drakelow, Burton. Third, L. Biney, Manchester. *Hens.*—First, C. L. Morris. Second, C. Morris. Third, Col. Stuart Wortley.

LA FLÈCHE.—*Cock.*—First, Hon. C. W. Fitzwilliam, Wentworth Woodhouse. Second, Col. Stuart Wortley. *Hens.*—First, Col. Stuart Wortley. Second, Hon. C. W. Fitzwilliam.

GAME (Black-breasted Red).—*Cock.*—First and Extra, Duke of Sutherland, Trunham. Second, J. Fletcher, Stoneclough, Manchester. Third, L. Biney. Commended, W. Bowes, Beverley. *Cockrels.*—First, Duke of Sutherland. Second, J. Fletcher. Third, J. Platt, Winsford. Highly

Commended, Mrs. F. S. Arkwright. *Hens.*—First and Extra, J. Fletcher. Second, E. Bell, Burton. Third, G. Bagnall, Draycott. Highly Commended, Mrs. Arkwright; J. Forsyth, Wolverhampton.

GAME (Brown and other Reds).—*Cock.*—First, J. Fletcher. Second and Third, Withheld. *Cockrel.*—First and Extra, J. Fletcher. Second, T. Burgess, Parleydam. Third, Duke of Sutherland. Commended, A. B. Dyas, Madeley. *Hens.*—First, T. Dyson, Halifax. Second, B. J. Anis, Mansfield. Third, Duke of Sutherland. Commended, T. Burgess.

GAME (Duckwings and other Greys and Blues).—*Cock.*—First, J. Critchlow, Oswestry. Second, W. Boyes. Third, Duke of Sutherland. Highly Commended, E. Udall, Stoke. *Cockrel.*—First, E. Bell, Burton. Second, Duke of Sutherland. Third, W. Dunning, Newport, Salop. Highly Commended, G. Westenholm, Sheffield. *Hens.*—First, Duke of Sutherland. Second, W. Boyes. Third, W. H. Mitchell, Mosley.

GAME (Any other variety).—*Cock.*—First, B. J. Anis. Second, Capt. W. G. Webb, Tamworth. Highly Commended, H. Avins, Tunstall. *Hens.*—First, J. Fletcher. Second, G. Lunt, Anderley, Market Drayton.

HAMBURGH (Black).—*Cock.*—First, J. Smith, Manchester. Second, Duke of Sutherland. Third, Mason & Walker, Denton. Highly Commended, J. M. Kilvert, Ludlow; Rev. W. Sergeantson, Acton Burnell. Commended, J. M. Kilvert. *Hens.*—First, Duke of Sutherland. Second, E. Brough, Leek. Third, J. N. Kilvert. Highly Commended, Mason and Walker.

HAMBURGS (Golden-spangled).—*Cock.*—First and Extra, H. Beldon. Second, T. Boulton, Handford. Third, T. Blakeman, Tottenhall. Highly Commended, T. Dean, Kighley; N. Marlor, Denton; W. Green, Kighley. *Hens.*—First, W. A. Hyde, Hurst, Ashlon. Second, T. Blakeman. Third, H. Beldon. Highly Commended, T. Dean, Kighley.

HAMBURGS (Silver-spangled).—*Cock.*—First, H. Beldon. Second, Duke of Sutherland. Third, J. Smith, Manchester. Highly Commended, H. Beldon; Duke of Sutherland. *Hens.*—First, Third, and Extra, Duke of Sutherland. Second, H. Beldon. Highly Commended, G. F. Whitehouse, King's Heath, Birmingham; J. Smith; W. Tatton, Leek.

HAMECRONS (Golden-pencilled).—*Cock.*—First, H. Beldon. Second, J. Smith. Third and Highly Commended, Duke of Sutherland. *Hens.*—First, H. Beldon. Second, W. Pitts, Fearncliffe. Third, Duke of Sutherland.

HAMBURGS (Silver-pencilled).—*Cock.*—First and Second, H. Beldon. Third, Duke of Sutherland. Highly Commended, Mason & Walker; Duke of Sutherland; J. Platt, Bolton; W. Pitts. *Hens.*—First and Second, Duke of Sutherland. Third, H. Beldon.

GAME BANTAMS (Black-breasted Red).—*Cock.*—First, Extra, and Third, N. Cook, Chowbent. Second, J. W. Morris, Rochdale. *Hens.*—First and Extra, J. H. Horne, Denton. Second, H. Ashton, Prestwich. Third, Rev. E. S. Tiddeman, Brentwood.

GAME BANTAMS (Any other variety).—*Cock.*—First, J. H. Howe, Denton. Second, W. Griffiths, Nantwich. Third, J. Palmer. *Hens.*—First, H. Ashton. Second, J. H. Howe. Third, L. Biney.

BANTAMS (Any variety, not Game).—First and Extra, S. H. Stott, Rochdale. Second, H. Beldon. Third, S. R. Ashton. Highly Commended, R. B. Riley, Halifax. Commended, Mrs. F. S. Arkwright; T. C. Harrison, Hull; Mrs. A. Woodcock; R. B. Riley.

DUCKS (Rouen).—*Ducks.*—First, J. White. Second, J. H. Lashley, Uttoxeter. Third, G. Bagnall. Highly Commended, T. Burgess. *Drake.*—First and Extra Prize, T. Burgess. Second, G. Bagnall, Draycott. Third, L. Patton, Hillmore, near Taunton. Highly Commended, J. White, Whitley, Netherpton; J. Wright, Melton Mowbray. Commended, J. J. Stott.

DUCKS (White Aylesbury).—*Ducks.*—First, Extra Prize, and Third, Mrs. M. Seamons, Hartwell, Aylesbury. Second, Mrs. M. Hornby, Winsford. *Drake.*—First and Third, Mrs. M. Seamons. Second, Mrs. M. Hornby. Highly Commended, Miss Pattison, Maldon.

DUCKS (Any other variety).—*Ducks.*—First, G. Barlow, Chester. Second, H. Beldon (Carolinias). Third, S. Burn, Whitley (Black East Indian). Highly Commended, T. C. Harrison; H. Mapplebeck. *Drake.*—First, S. Burn, Whitley. Second, A. & J. Trickett, Watford, near Manchester. Third, Rev. W. Sergeantson.

GESE (White).—*Geese.*—First, S. H. Stott. Second, Mrs. M. Seamons. *Gander.*—First, S. H. Stott. Second, Mrs. M. Seamons. Third, H. Meir, Tunstall.

GESE (Grey and Mottled).—*Geese.*—First, G. Bagnall. Second, J. Lyett. Third, Mrs. M. Seamons. *Gander.*—First, Mrs. M. Seamons. Second, E. Leech. Third, C. T. Dean, Coughton. Highly Commended, S. H. Stott.

TURKEYS.—*Cock.*—First and Third, F. E. Richardson, Broomshall. Second, Mrs. Wagg, Broomshall. *Hens.*—Prize, F. E. Richardson.

SELLING CLASS.—First, J. Walton, Knypersley. Second, J. Mansell, Longton. Third, H. Beldon, Goitstock, Bingley. Highly Commended, G. Hood, Burslem; J. Wlston; R. B. Wood; J. Morrison; F. Cooper, Hanley; E. Alder; T. Boulton, Hanford; T. Clift, Hanley; E. Fell, Burslem; G. & C. Furness, Accrington; J. Sichel; T. Beech; J. Palmer; N. Cook; Duke of Sutherland; P. Unsworth; Rev. G. Crewe, Etwell, Derby; J. Stephens; Capt. D. Lane; E. Shaw. Commended, Rev. E. S. Tiddeman; C. Sidgwick, Kighley; F. Cooper, Hanley.

Extra Prize to the Exhibitor gaining the greatest number of Prizes in poultry, H. Beldon.

PIGEONS.

TUMBLERS (Almond).—First, J. Fielding, jun. Second, F. G. Leach, Middlesbrough.

TUMBLERS (Any other variety).—First, J. Hawley, Bingley. Second, J. Griel, Nantwich. Highly Commended, J. Fielding, jun.

CARRIERS.—First and Extra Prize, J. C. Holt, Lawton, Stoke. Second, and Extra Second, J. Hawley. Highly Commended, F. J. Leach; H. Yardley; G. Sturges, Leicester; W. Wooley, Bunbury.

POUTERS.—First and Extra, J. Hawley. Second, H. Brown, Wakeley. Highly Commended, J. Hawley.

BALDS.—First and Second, J. Fielding, jun.

BEARDS.—First, T. Newell, Ashton. Second, J. Fielding, jun.

RUNTS.—First and Second, H. Yardley.

JACOBINS.—First and Second, J. Hawley.

FANTAILS.—First, J. Hawley. Second, H. Yardley. Highly Commended, H. Yardley; J. Hawley.

TRUMPETERS.—First and Extra Prize, J. Hawley. Second, J. Frith, jun. Dewsbury. Highly Commended, J. Hawley; J. Frith, jun. Commended, W. Gamon, Chester.

OWLS.—First and Highly Commended, J. Fielding, jun. Second, T. Newall.

NUNS.—First and Second, W. Croft, Killinghall. Highly Commended, W. Banks, Runcorn.

TURBITS.—First, H. Yardley. Second, J. Hawley. Highly Commended, T. Robson, Fenkridge.

BARBS.—First and Extra, J. Frith, jun. Second, H. Yardley.

DRAGONS.—First and Extra, A. Boote, Crewe. Second, H. Yardley. Highly Commended, J. J. Bradley; W. Garner, Chester; G. C. Holt; J. Hawley.

MAGPIES.—First, F. Sales, Derby. Second, J. Hawley. Highly Commended, H. Yardley.

ANTWERPS.—First, R. Weston. Second, H. Yardley. Highly Commended, J. J. Bradley.

ARCHANGELS.—First and Second, H. Yardley.

ANY OTHER VARIETY.—First and Extra, W. Banks. Second, F. Sale. Highly Commended, J. Mason, Boroughbridge, York; H. Yardley.

Extra Prize to the Exhibitor gaining the greatest number of prizes, J. Hawley.

CANARIES, &c.

BELGIAN (Clear Yellow).—First and Second, W. Warren, Macclesfield. Extra and Very Highly Commended, T. Carrington, Derby. Very Highly Commended, J. Austin, Leek.

BELGIAN (Clear Buff).—First and Very Highly Commended, W. Warren. Second and Extra, T. Carrington.

BELGIAN (Crested, to be judged for best Crest, Irrespective of Colours).—First and Very Highly Commended, W. Warren. Second, H. Ashton, Prestwich.

NORWICH (Clear Yellow).—First, Extra, and Second, T. Carrington. Very Highly Commended, Moore & Wynne, Northampton.

NORWICH (Clear Buff).—First and Extra, T. Carrington. Second, Moore and Wynde.

NORWICH (Variegated).—First and Extra, T. Carrington. Second, Moore & Wynne. Very Highly Commended, T. Carrington; Moore and Wynne.

LIZARD (Jonque).—First and Second, W. Warren. Extra and Very Highly Commended, H. Ashton. Very Highly Commended, T. Carrington.

LIZARD (Grey).—First and Extra, H. Ashton. Second, W. Warren. Very Highly Commended, W. Warren; T. Carrington; S. Bunting, Derby. Highly Commended, T. Carrington.

PIED MULE (Yellow).—First, Extra, and Second, H. Ashton. Very Highly Commended, T. Carrington.

PIED MULE (Buff).—First and Extra, H. Ashton. Second, T. Carrington. Very Highly Commended, H. Ashton; S. Bunting.

GOLDFINCH.—First and Extra, H. Ashton. Second, S. Bunting. Very Highly Commended, Moore & Wynne. Highly Commended, T. Carrington.

MULE (Yellow, bred in the Potteries).—Prize, T. Lowndes, Shelton.

LINNET (Brown, moulted in the house).—First and Extra, W. Pendington, Selton. Second, J. Ward, Dagsfield, Longton. Very Highly Commended, S. Bunting. Highly Commended, G. Broad, Burslem.

Extra Prize to the Exhibitor gaining the greatest number of prizes for Belgian and Norwich Canaries, T. Carrington.

Extra Prize to the Exhibitor gaining the greatest number of prizes in remaining classes, H. Ashton.

RABBITS.

HEAVIEST.—First, G. Jones, Birmingham. Second, A. H. Easten, Hull. Highly Commended, J. Hill, Newtown, Fenton.

LOP-EARED.—First, W. Allison, Sheffield. Second, G. Jones. Highly Commended, Mrs. F. S. Arkwright, Etwell Hall, Derby; A. H. Easten.

SILVER-GRAY.—First, J. T. rykes, Rochdale. Second, W. B. Etches. Highly Commended, H. Yardley.

ANY VARIETY.—First, W. Ward, Nantwich. Second, T. Schofield, jun., Castlemere, Rochdale. Highly Commended, G. F. Whitehouse, King's Heath, Birmingham.

JUDGES.—Game and Game Bantams: Rev. T. O'Grady, Hognaston Vicarage, Ashbourne; Rev. G. F. Hodson, North Petherton; and Mr. Edward Frith, Chatsworth. Pigeons: Mr. Bulpin, Riverside, Bridgewater. Birds: Mr. G. F. Barnesby, Derby.

NORTHERN POULTRY AND PIGEON CLUB'S SHOW AT ABERDEEN.

THIS Society held its third annual Exhibition and competition of poultry and Pigeons on the 7th and 8th inst., in the Artillery Gymnasium. The area of this building is admirably adapted for such exhibitions, and although of great size—120 feet by 50—it was not too large for the purpose. The poultry pens were of ample size and well constructed, forming five long lines, with passages between; and across the upper end of the hall, which is slightly elevated, were arranged the Pigeon pens, of the same shape as those used at Glasgow. On entering this building the eye as well as the ear was at once arrested by the large collection of specimens brought together, all in evident health and fine plumage. The entries for poultry amounted to 441, and the exhibitors were both numerous and widely spread.

The catalogue opens with *Game Birds*. We have seen, as a whole, a better class of this bird at Aberdeen. Still, many of those exhibited were very fine, and the prize cocks and hens, shown by Mr. Anderson, of Ruthven House, Meigle, were well deserving of the position in which they were placed by the Judges. There were several very fine cockerels and pullets. The first prize and cup were awarded to the proper pen, but there was a pen shown in this class by Mr. Bowe, of Carlisle, which particularly took our fancy.

Spanish fowls were a very superior class. The first prizes and cup were carried off by a well-known breeder—Mr. Redpath, Edinburgh, and the second prizes were awarded to Mr. Meff, Aberdeen, for first-class birds.

Dorkings were a fine class, but as a whole hardly equal to what we have seen further south, although decidedly improved since last show.

The class of this Show was the *Cochin-China*. It was truly magnificent; and a finer array of these birds we have seldom seen. Great size and perfection of feather were the rule. Some of the Whites were splendid, and the judgment admirable. We overheard a countryman, while through his spectacles taking a back view of a majestic White cock of this class, say, "If I had seen that beast before me on the road, I would have thought it was a goat."

Hamburghs, as a class, were fine, though some of them were not so decidedly marked as we have seen. The Pencilled were certainly better than the Spangled. This was a large class—ninety pens, and had a very imposing appearance.

There were twenty-nine pens of *Brahma Pootras*, among them many very fine birds. The first-prize cock and first-prize and cup pair of hens were well deserving of their position. Cockerels and pullets were excellent. All the prizes in this class were carried off by Keith Jopp, Esq., the respected President of the Society.

First prize, *Any other variety*, was taken by James Gordon, Esq., of Manar, with a very beautiful and gracefully-formed pair of Black Hamburghs.

Game Bantams attracted great attention. This was a beautiful class, many of the birds evidently pets at home. We have seen smaller birds of this class, but never more elegantly formed, or having more the appearance of possessing the pluck of the Game fowl. *Ducks* were very large and beautiful; *Turkeys* rather small but fine.

We never visited a show of poultry where the birds were in better order, evident high health, cleanness, and perfect feather without exception.

PIGEONS.—We were pleased—somewhat surprised, to find such a fine show of the more tender birds—Pigeons, so far north as the "granite city," and many of the finest birds the property of exhibitors resident there. Among the classes of young *Pouters* competing for the silver medals there were many very fine birds—fine not only in shape, but in markings. We must, however, differ from the Judge in some of his awards in these classes. Those in the White class stood in their proper places, but the first and second prizes in the Blues ought to have been reversed, Mr. Meff, of Aterdeen, being clearly entitled to first prize. Of the Black Pied Mr. Meff's pen, 445, ought to have been first, though not noticed, the first prize, shown by Mr. Sharp, Johnstone, being bad Blacks—a blue black. Then in "Any other colour" Mr. Sharp was entitled to first, showing a splendid pair of Reds, whereas it was awarded to Mr. Porteous, Edinburgh, for a pair of Chequers, certainly handsome birds, but small. White cocks were very fine; Mr. Stewart, Perth, took first with the bird that stood in the same position at Glasgow. In Blue or Red cocks there were several first-class birds. Mr. Huie was first with a Blue of great length of feather and limb. Amongst others in this class there was one particularly worthy of notice, shown by Mr. Grant, Edinburgh. It was a Red, not so good in colour, but having all the characteristics of a perfect Pouter. We were surprised it was not claimed. There was little choice in the class for White hens, which were all fine. Mr. Huie was first with a very handsome but small bird. Mr. Grant was second with a well-bred bird. The class of Blue or Red hens contained some splendid birds, very large and well-marked; but the bib, one of the finest points in markings on Pouters, was not so general as in the other classes. The colours and markings in the class of hens of any other marking were various, and we must again differ from the Judge. The third prize, awarded to a very handsome Yellow hen shown by Mr. Wright, Edinburgh, was clearly an error. This bird should have stood first, and the second prize ought to have been given to the highly or very highly commended birds, the one a Mealy, the other a Yellow Mealy, both handsome and nearly equal. The second-prize bird ought not to have been noticed.

In *Carriers* the entries were small, and the birds only second-rate. Short-faced *Tumblers* were a splendid class. Several of the birds were close to the standard in point of feather, and in head and beak would have kept their place in our largest shows. *Fantails* formed a large class, and the specimens, as a rule, were of no ordinary character. Some of the finest birds we have ever seen were present. We know the difficulty of judging this class of birds, and were not surprised at the slips that we think were made. On careful examination we think Mr. Smith, Broughty Ferry, ought to have been awarded the first prize, and Mr. Morrison, Aberdeen, the second. Many of the best birds were ill-matched, and others so close in points that a line could with difficulty be drawn between them. *Jacobins* were very good, not a bad bird being shown. *Barbs* were good; but as all the birds seemed young, they did not offer that marked display which as a class they generally make in our shows. *Trumpeters* were a capital class. We think Mr. Grant, of Edinburgh, should have taken second instead of third prize; and Mr. Meff third instead of highly commended. Though not the largest, this was one of the best classes in the Show. *Turbits* were a good class; some of the birds showed rather too much of the shell crown. The *Owls* were fair. The first-prize birds were decidedly the best; they were neat, pretty birds. Of *Dragoons* there were several beautiful Blues. The first-prize birds were very handsome. The catalogue closes with *Any other breed*. A pair of very fine Lace Fantails stood first, and a pair of Lahores (not a common bird), second. Ice Pigeons were third. A very pretty variety was formed by this class.

We cannot but pronounce this Show a great success, the only want apparent was the lack of visitors. This will mend in time. We wish

our northern friends all prosperity, and feel convinced that a Society composed of gentlemen who have carried out their plans so thoroughly will, ere long, render this Show one of the most attractive.

THE WILD TURKEY DOMESTICATED.

I WAS surprised to find stated by Mr. Tegetmeier, in one of his compilations, "that though thousands of wild Turkeys have been hatched under barn-door fowls, they have invariably strayed off the following spring to their wild kindred in the forests, with whom they have remained, and all attempts to retain the wild Turkey as a barnyard fowl have completely failed." Now, if this error, for error it most unquestionably is, has not been before refuted in your columns, perhaps you may deem the following notes on the matter worth publishing. The facts are all the other way, so much so that at the principal poultry shows in Canada prizes are regularly offered for the best specimens of domesticated wild Turkeys. I myself have now in my possession a flock of these beautiful birds; and though the old patriarch thereof, a splendid fellow, answering exactly to the description of the male wild Turkey given on the same page of Mr. Tegetmeier's book, has often strayed away, and once remained away for two nights, he always concludes it is best to come back to his wives and children, and especially to his food. He was hatched from an egg laid in the woods by the wild birds.

I have raised, and now own, both the pure wild Turkeys and the half-breds, but greatly prefer the former as being infinitely the handsomer, the larger, and much the hardier. I did not lose a chick last year by disease of any kind. Instead of being stupid like the common Turkey, which is so stupid that the French here always say, "*bête comme une dinde*," as stupid as a Turkey, the wild Turkeys are wonderfully intelligent. One mode, however, in which they showed their intelligence to me was rather unprofitable. I gave to one of the hens a sitting of Light Brahma eggs, she sat upon them faithfully; but when the first unfortunate chick made its appearance, recognising it was none of hers, she straightway carried it out of the nest and put it to death, and so with the second and third; then, apparently despairing of the rest, she destroyed her nest and left it in disgust. A common Turkey sitting near her raised with the greatest complacency a brood of Aylesbury Ducks.

That it would be difficult to begin the domestication of these birds in places situated near the haunts of the wild ones I have no doubt; but that it can be done in other localities, and has been done in many places in Canada, is certain.—FREDERICK W. ANDREWS, Quebec.

NOTES ON GOLDFINCH MULES AND MULE BREEDING.

I MENTIONED in your number of December 24th that I exhibited in the north of England and took prizes with Goldfinch Mules. Those birds assisted in winning for me the silver cup at the noted Southampton Show, which took place in the month of November last. I believe the fact of gaining a cup at a show with Mules alone, is unprecedented. Although the best of my Jonque Mules is a first-class one in every respect, still my recollection and fancy are firmly fixed on a famous departed veteran Jonque Mule, which gained for me a dozen first and second-class honours in England and Scotland during the time it was in my possession. The bird not only did good service for me, but travelled several thousands of miles, at one time being in the front rank at Southampton, then again carrying away high honours at the Northampton, Crystal Palace, and Glasgow Shows. Three years in succession the bird was shown at the latter place; the second time, to my great surprise, it came home without even a commendation. Nothing daunted, I was determined, owing to having received a communication from Carlisle, to wipe off the disgrace hanging to my Mule, and exhibit the bird there again. I entered the Mule with an even-marked Mealy beauty, and had the satisfaction of carrying off the first prize in each class, and receiving with the prize money a couple of well-executed gilt Morocco trophies of the Mule contest at Glasgow. I have not since had an opportunity of showing there, owing, I believe, to the exhibition for cage birds having been discontinued.

On each of the Morocco honours I have named above is a representation of a Scotch fancy bird, or Don, evidently the bird of Scotland, and exhibited in many shows in the north of England. Under these circumstances I certainly do not agree

with the remarks of Mr. Howarth Ashton, that the "Scotch Don" is a "mongrel." Let it be whatever it may (and of all kinds, I must admit it takes my attention the least), it is quite evident there are numerous enthusiastic fanciers in the north who delight in breeding birds of this description as much as I or others do in Mules, Norwich, Lizards, London Fancies, Belgians, or other kinds. Were we all alike in our tastes, exhibitions would not be what they are. With respect to classes for London Fancy and Crested Belgians (two first-class breeds), being omitted from the Sunderland schedule, I have no doubt it was owing to the likelihood of there being but few entries, and I think it is politic to study more particularly the classes most likely to return something towards paying the expenses of a show.

Resuming my remarks about Mules, I must say that the last time the Jonque Mule alluded to above was shown by me, was at a Derby All-England exhibition, and after carrying off first honours he was purchased, with a splendid clear Mealy Mule belonging to Mr. Bemrose, Derby, by Major H. Ashton, of Manchester. This bird also took a first prize at the same Show, and was the finest specimen of the kind I ever witnessed. Perfection of feather and beautiful colour predominated in each case. Such birds are not to be seen every day, but I must admit that four finer Jonque Goldfinch Mules could not possibly be together in company than were at the last Crystal Palace Bird Show. The task of judging them was one not very easily accomplished. Myself, with the two gentlemen who officiated with me, after a considerable amount of comparing and casting up the different points, at length decided. It was the nicest possible balance with them, and even when the first award in the class was made, such was the closeness of the competition, that an extra second prize was given. Mules, such as I have referred to, are of great value, and are an honour not only to those exhibiting, but a credit to those who are at the vast trouble of carrying out the shows, secretaries more especially.

Goldfinch Mule-breeding, like the breeding of Canaries, requires much attention, but more so in some respects than in breeding Canaries, owing to the mischievous habits of Master Goldy, who is ever ready for destroying or pulling to pieces the nest, or diving his sharp beak into an egg. As a general rule it is so, but of course there are exceptions, for he, like the Canary cock, will often assist to carry building materials for the hen's nest, and will also feed and help to rear the young ones.

The Goldfinch is an exceedingly merry bird, and it is in the "merry month of May" that I commence Mule-breeding, having previously prepared my Goldfinches with extra feeding. I have many instances noted down of Mules having been bred before the time I have named. I have known Mules to be bred in February, but it was owing to the birds having been kept in a room where there were fire and gas. Birds so kept will breed earlier than when away from all artificial heat; but the season is very short under the circumstances, and they fall into moult much earlier, and stop breeding at the time when one ought to be doing the best with them. Fire and gas I do not at all recommend, but would sooner keep my birds away from them, and wait until the natural period of genial weather setting in.

During the spring I supply my Goldfinches with canary, hemp, flax, groats, biscuit and egg mixed, and also dandelion fresh from the field or garden. This food with grit, or, as we call it here, Trent sand, and now and then a bath, will keep Goldfinches in good condition, which may be proved by the birds getting well into voice, and giving, after the usual chee-wee-yeer, the peculiar twist with their open-spread tails.

I never attempt to breed with a young or yearling Goldfinch, it being, I consider, a waste of time. I prefer a two-year-old bird—a white-legged one (as such are called by many), which colour the legs become from black or dark brown during the time the birds is kept in a room from a yearling and passing through the moult. I care not whether or not it be a "three-by-six," as termed by some of the London dealers. It may, perhaps, be information to some to learn that this is a Goldfinch with three feathers on each side of the tail, bearing the usual white patches or marks on their lower portion, with the six centre feathers black. All cock Goldfinches are not so marked, most of them having but two feathers on each side marked with white, and eight feathers dark in the middle of the tail. It is immaterial to me whether it be a cheverel finch or not, although there is a great cry out for such by many. A "cheverel" is known by the mark on the throat, some birds only being slightly specked, whilst others have a large distinct

white throat entirely separating the red round the head of the bird. There is no proof that a cheverel finch will breed good pied Mules rather than other finches. This I have proved. I have bred pied Mules from both kinds—viz., cheverels and those perfectly marked. I mean by birds perfectly marked, those without the white speck or throat mark. In judging Goldfinches I would give the preference to a perfect bird, one not marked on the throat. And again, in choosing a Goldfinch for breeding purposes, it matters not whether the bird be a large specimen or one of a moderate size. One of the best Mules I ever bred was from a small finch. I have had varied success from either.—G. J. BARNESBY, *Derby*.

(To be continued.)

CROSS-BREEDING BEES.

I FOLLOWED the directions given by Mr. Woodbury in uniting the Ligurian queen to my stock of black bees on the 3rd of last November. I confess that I had some fears as regards her safe arrival, for it was then becoming very cold, as well as with regard to the operation of changing the queens at such a late period, but when I opened the box I was delighted to find her in fine condition. I put her on her new throne about ten o'clock next morning, and about four in the afternoon the bees were all settled, so that I was able to place the hive in its house again all safe and sound. On New Year's-day I was looking at them, and to my agreeable surprise saw two or three beautiful little yellow-jackets marching about the combs. Looking again on the 6th of January I found their numbers increased; there were then several of them to be seen moving about the hive with the other bees. My stock was very strong and heavy.

I have two other black stocks standing near that above referred to, and I purpose immediately after the Ligurians have swarmed to place the old Ligurian stock in the place of one of the black stocks, again after the second swarm to remove it to the site of the other black stock, to take the surplus bees from each of them, and then to remove the two black stocks to another garden; but I should be thankful for some advice, as I should like to keep the Ligurians pure.

I read in the Journal a few weeks since of a correspondent coming to the conclusion, through his experience with Ligurians, that hybrids are by far the most profitable as regards honey, quite as prolific as the Ligurians, and much hardier. If such is the case it would not be worth keeping them pure. I should be glad of your opinion on this matter also.—H. R.

[We have never found that the hybrid, or rather mongrel, race, produced by the interbreeding of the black and Ligurian varieties of the honey bee, possesses any advantage over the pure Italian, and therefore much prefer the latter. We are glad to find that you purpose adopting Mr. Köhler's mode of propagating Ligurians, described in page 141 of our last volume. We should advise you to follow his instructions implicitly, and hope that you will communicate the result.]

BEES IN SOUTH LANCASHIRE.

THE season of 1898 has been one of the most extraordinary for bees. It commenced with very early pollen-gathering, and the bees made headway in breeding very fast. In May I do not think any season ever surpassed it for the quantity of honey that was gathered; but, alas! June and July came with their scorching hot days, no dew at night, and no swarms. I began the year with fourteen stocks, all well and strong, and I had only two swarms—one the last day of May, and the other on the 14th of June. I took thirteen of my stocks to the moors, where they did well. They came home full of honey, and filled several bell-glasses, as well as bringing their hives up to great weights; but had it not been for the rains we had about the middle of August, we should have had but a poor stock of honey to adorn the sideboard.

I have often expressed a wish in "our Journal" that bee-keepers generally would give descriptions of their year's experience, as it would be read with pleasure by others. I should like to hear opinions respecting the non-swarving this season. It is said that a dry season is best for honey, and a damp one for swarms. The latter may be true, but the dry season of this year is an exception as far as honey-gathering is concerned, except in damp localities. I know that not far from here (Denton), some of my friends' bees have done well, being in damp localities near the river Mersey.

I read with pleasure the account of the meeting of German bee-masters held at Darmstadt in September last, and should

be glad to see the same kind of meeting carried out in England; it would be the means of doing much good, and of encouraging bee-keeping.

What a benefit it would be to the working classes if they could have their half a dozen hives of bees, and after taking their honey in July convey them to the heather! I have often robbed two or three hives in July, taking 20 lbs. of honey from each, and then carried them to the moors, getting them back from the 15th to the 20th of October. Hundreds at the present day destroy their bees for the honey, knowing no better plan. I kept bees two or three years previous to seeing "our Journal," in 1860. When I did see it I perceived at once that I could make myself more at home with my little pets. If at our poultry shows, &c., there could be a prize for bee hives, the working classes would then be able to see the different kinds of hives in use, and so do away with the brimstone pit, which must be repugnant to the feelings of any bee-keeper. A SOUTH-LANCASHIRE BEE-KEEPER.

OUR LETTER BOX.

HENS NOT LAYING (H. N.).—Change of place will often check a hen's laying. You had better write to any one who sells on "the usual terms," and ask what is meant.

BANTAMS.—Messrs. S. & R. Ashton inform us that they won the cup with their Black Bantams at Bristol, for Bantams, any variety except Game.

KEEPING EGGS FOR HATCHING (Lemon Bug).—If the eggs are to be put under hens shortly, it is unimportant how they are kept, or in what position. If it is desired to keep them for some time, they should be kept on their sides and turned every day.

WHITE DORKING CHARACTERISTICS (E. H. P.).—White Dorking fowls must have five toes. They are not Dorkings without them. The combs and wattles should be red. Brahmas must be feather-legged down to the toes, but anything like a crest or top-knot, or tuft on the head, would at once prove the possessors impure.

POULTRY REWARDED FOR WEIGHT (T. H.).—It is generally pretty well known that certain classes are principally judged by weight, because it is the chief point in the breeds that compose the classes. It is more important than any other in Ducks and Geese. Admitting there is no defect of plumage in any competitors, then weight must decide among them. The beautiful Black Duck is, on the other hand, appreciated in proportion to its diminutive size; colour being equal in all competitors, the smallest are successful.

COCHIN-CHINAS IN CONFINED SPACE (Little Cock Wat.).—In such a run, 27 feet by 9 feet, and a roost 8 by 10, you may keep a cock and five hens very well. They will do everything well, but it is too small to rear chickens. You must feed on barleymeal, ground oats, whole barley, Indian corn, all for a change, one only at a time. The help in the way of food will be kitchen and table scraps, in lieu of, not in addition to, the above. The necessities for health will be road grit, fresh mould, a little bricklayers' rubbish, all put in heaps; sods of growing grass, and green food, especially lettuce. The cost of keeping fowls in this state should not exceed 3d. per head, but with good management they will cost somewhat less.

ROUGHNESS ON COCHIN-CHINAS' LEGS (F. D. I.).—Your fowls are suffering from a disease of comparatively recent appearance. It is only within the last two years it has been much known; it was attributed to the action of snow at that time, but it cannot be the case now. We have not heard of a case before. Last year and the year before we had it both in young and old. It was communicated from one to the other, but did not become general. In many cases it induced paralysis and ended in death. It was difficult to treat, and the only success we had was achieved by frequent dressings with salad oil.

SUNDERLAND SHOW (R. Hawman).—There is only one sentence in your letter that we can insert. "I have yet to learn that a Lizard Canary with a green shade on its plumage is better than one with an orange shade (for as far as I know the higher the colour, the deeper is the black), supposing them to be equal in other respects." Complaints about erroneous judgments should be sent to committees; if published they cause needless dissatisfaction to winners and losers.

DETECTING SEX OF FANTAILS (Spotted Bob).—The hen is known by her thinner neck, finer head, and general delicacy of appearance. The Fantail Pigeon is one of the very few in which the hens are prettier than the cocks.

PIGEONS DISEASED (Fido).—Tell us more explicitly the disease of your young Pigeons. Is the lump hard? Is the smell offensive? and is it in the mouth or throat, &c.?

WING-DISEASE IN PIGEONS (—).—We advise you to apply a weak solution of tincture of iodine, "iodine paint." The chemist you purchase it of will tell you how frequently to use it, as that depends upon its strength. In very bad cases there is no cure.

CANARY LOSING ITS VOICE (T. S.).—We know of no cure.

FOOD FOR A MILCH COW IN WINTER (Inquirer).—Your case of a cow not giving much milk at this season is not an unusual one, and we hardly know what food to advise being given her to increase the quantity without in some degree deteriorating the quality. Brewers' grains, and bran and other mashies increase the quantity, but the quality is poor. Oil cake, however, enriches it, and we have the present winter been giving both to our herd of about a dozen. Mangold and swedes are often found fault with by those who are particular about the quality of their milk and butter, and we think ought never to be given to milch cows till the beginning of March, when much of the rankness is gone. We have, however, for many years had complaints of milk being rank-tasted early in the autumn, from the cows eating the new-fallen leaves of forest trees, which we cannot keep them from. Some pastures also produce a sort of wild onion (Ramsons), which, if partaken of by the cows, gives a peculiar bad flavour to the milk, and we need hardly say the cabbage tribe is bad; Where the cows had a good pasture to roam in, and plenty of good hay, we have often found the richest milk produced in winter by that alone. We do not think, however, that a moderate quantity of grain—hay once a-day, and oil cake once, can impart any improper flavour.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JAN. 23—FEB. 3, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.		h.	m.	
23	TH	Meeting of Royal and Zoological Societies, 8.30 p.m.	45.7	30.7	38.2	21	47	af 7	40	af 4	32	af 5	53	af 7	0	13	17	28
29	F		45.5	31.5	38.5	17	45	7	41	4	54	6	32	8	17	13	27	29
30	S	Royal Horticultural Society, Promenade.	44.6	32.2	38.3	22	44	7	43	4	18	8	5	9	18	13	37	30
31	SUN	SEXAGESIMA SUNDAY.	44.7	30.5	37.6	20	43	7	45	4	38	9	34	9	19	13	45	31
1	M	Meeting of Entomological Society, 7 p.m.	44.0	31.8	37.9	13	41	7	47	4	55	10	0	10	20	13	53	32
2	TU	Meeting of Institute of Civil Engineers.	44.4	31.3	37.8	20	40	7	49	4	morn.	25	10		21	14	1	33
3	W	Meet. of Society of Arts, 8 p.m.	45.0	30.9	37.9	20	38	7	50	4	13	0	53	10	(11	7	34

From observations taken near London during the last forty-two years, the average day temperature of the week is 44.8°; and its night temperature 31.2°. The greatest heat was 57°, on the 29th, 1863; 1st, 1852; and 3rd, 1850; and the lowest cold 8°, on the 29th, 1865; and 31st, 1857. The greatest fall of rain was 0.52 inch.

DESSERT ORANGE CULTURE.

(Reprinted, with some additions, from the Report of the International Horticultural Exhibition and Botanical Congress.)



In the diary of that "fine old English gentleman," John Evelyn, may be found an intimation to the effect that he had eaten as good "China Oranges," plucked from his own trees, as he ever wished to eat. In those days dessert Oranges were, it seems, called "China Oranges." Although Oranges were cultivated in France long before Evelyn's time, yet they were considered merely ornamental appendages to palaces and mansions: no thought seems to have been turned to them, so as to consider them fruit trees; and even Evelyn, with his remarkable horticultural sagacity, does not mention that he had ranked Orange trees among fruit trees; for in his "Kalendarium Hortense," when he mentions for every month "fruits in prime and yet lasting," no mention is made of Oranges. It would seem, therefore, that his gathering of Oranges fit to eat was an accidental occurrence, and we are led to suppose from the silence of gardeners for nearly two hundred years as to their culture, that the Orange-eating world has felt perfectly satisfied with imported Oranges, brought quickly by fast-sailing vessels; still, the difference between Oranges freshly gathered from the trees, and the very finest imported, is most remarkable; there is a crispness and fine aroma in Oranges freshly gathered difficult to realise, unless they are promptly compared with imported fruit: they are indeed a luxury, and, as such, will be cultivated ere long in every good garden.

The houses best adapted for their cultivation are the large span-roofed, 24 feet wide, 6 feet high at each side, and 15 feet high in the centre. A house for this size will require eight 4-inch hot-water pipes, four on each side, as artificial heat is required all the year to ripen Oranges in one season perfectly.

A smaller span-roofed house, 5½ feet high at each side, and 12 feet high in the centre, heated by four 4-inch hot-water pipes, two on each side, is almost as eligible for Orange culture as one even of the larger size. A house of these dimensions, with a central path, and a border on each side planted with Orange trees, would form a pleasant and productive Orange garden; but to form an Orange grove, so as to have trees of fine growth, and to give abundant crops, the larger house must be resorted to.

From the experience I have gained, I firmly believe that no conservatory, no Orchid house, no greenhouse, is half so beautiful or interesting as an Orange house constructed on the principles I now advocate, and provided with fixed roofs, rafters 24 inches apart, glazed with large pieces of glass, and admitting abundance of light; so that in December, when the trees are covered with their golden fruit, and many of them showing their snowy-white perfumed flowers, the scene is indeed enchanting, and is enhanced by the agreeable temperature, which need not be higher than from 50° to 60° (10° to 15° Cent.), in cloudy weather. It is not fierce heat in winter that ripening Oranges re-

quire, but an even agreeable temperature, such as is experienced in the Azores during that season of the year.

The houses I have mentioned should have side ventilation, as in orchard houses—viz., an opening in each side of the large house 2 feet wide, for the smaller house 1 foot wide; these openings should be in the centre of each side, and shutters of wood or sashes employed to close them, the latter, of course, being the most agreeable.

In houses thus treated, Orange trees may be cultivated in pots or tubs, or planted in the borders. There is no doubt that more rapid growth would take place if such borders were heated by having hot-water pipes placed 2 feet under the surface; but from recent experience I am inclined to think this is not absolutely necessary, for if the borders are raised 18 inches above the surface, they would have sufficient heat from the atmosphere of the house, and their temperature would be quite equal to sustain the trees in health.

The cultivation of dessert Orange trees in pots or tubs is very simple; the compost they require consists of equal parts of loam and manure, the latter thoroughly decomposed; the former should not be sifted, but chopped up with the pieces of turf and roots, so as to form a rough compost. The trees will grow in this freely, and bear abundantly; but they should have gentle, constant root heat: this is best given by enclosing hot-water pipes in a shallow chamber of bricks, and placing the pots on a flooring of slates or tiles forming the roof of the chamber.

The compost for the borders in which Orange trees are to be planted should consist of turfy loam two parts, and equal parts of thoroughly-decomposed manure and leaf mould. After planting, the borders should be trodden down firmly, as Orange trees seem to flourish best in firm loamy soils. In the Orange gardens of Nervi, where Orange trees are, or used to be, so largely grown for exportation, and imported by the London dealers in oil, &c., the soil is a tenacious yellow loam.

The best form of tree for an Orange garden under glass is the round-headed, a form which it seems to take naturally; for if it is endeavoured to be cultivated as a pyramid, which would seem desirable, its lower branches soon become weakly and unhealthy. If trees with stems 2 or 3 feet in height are planted, the lower branches may be gradually removed till a clear stem of 5 feet in height is formed, and this height will be found sufficient. They may be planted from 5 to 6 or 7 feet apart, according to the size of the house, and the room which can be afforded for each tree. It must not be forgotten that in small houses the heads of the trees may be kept in a compact state by summer-pinching, and in large houses be allowed greater freedom of growth, so that the owner of an Orange garden in England may sit under the shade of his Orange trees.

There are but few kinds yet known of really fine dessert Oranges; the amateur who wishes to plant an Orange garden to supply his dessert, must not think of planting the numerous varieties of the genus *Citrus* grown by Italian and French cultivators; they are mostly what are called fancy sorts, and are more prized for their foliage and flowers than for their fruit.

One of the most charming and prolific of dessert Oranges

is the Tangierine: the tree has small leaves, and seldom attains a height of more than 7 feet, even in North Africa. Its most valuable quality is its early ripening, so that in October, just as the late Peaches and other soft fruits are over, this luscious little fruit is ready for the dessert; and when freshly gathered no fruit can be more gratifying or delightful, as its aroma is so delicious, and its juice so abundant, in this respect offering a pleasing contrast to those imported from Lisbon in November and December, the flesh of which is generally shrunk from the rind instead of being ready to burst, as is the case with those plucked from the tree. They should, in common with all home-grown Oranges, be placed on the table with some leaves adhering to their stalks, thus showing that they had not made a voyage.

Among full-sized Oranges the Maltese Blood takes the first rank; when quite fresh from the tree it differs much from those imported, although the voyage as now made by steamers is of short duration. I was not so fully aware of this till early in January, 1866, when I was able to compare some fine imported fruit with some gathered from my trees. I found the former, although rich and juicy, yet flat in flavour compared with those freshly gathered; they lacked the crispness and aroma, which were most agreeable in the latter. The great advantage in planting this sort is its tendency to bear fine fruit while the trees are young; they are indeed so prolific that trees of only 2 feet in height have here borne nice crops of fruit.

Some varieties, quite equal to the foregoing in quality, but without the red flesh so peculiar to these "Blood Oranges," have been imported from the Azores, the paradise of Orange trees. One of the most desirable sorts is called simply the St. Michael's Orange. This kind has a rind varying in thickness, is very juicy, and bears abundantly, even while the trees are young. In the Orange house these will ripen towards the end of December; and throughout January and February, in common with the Maltese Blood Oranges, are in great perfection.

No one but an amateur of gardening can imagine the pure, quiet pleasure of taking a morning walk in the Orange house during the above-mentioned dreary months, and plucking from the trees Oranges fully ripe. I have had much experience in the culture, and, I may add, in the eating of fruit; but I can say, with a firm conviction, that I have never enjoyed any kind of fruit so much as I have Oranges of my own plucking in winter.

In addition to the three leading varieties I have mentioned, there are several kinds which will, doubtless, prove interesting and valuable. It is not to be expected that so much variation in flavour, as in the Pear, for instance, can be met with in Oranges. I believe, however, that when our Orange palates are educated, we shall find many delicate distinctions in the flavour of Oranges. As far as I have gone I have found the Mandarin Orange larger and more flat in shape than the Tangierine, and not so good as that sort. The Embigua, the Egg, the Silver Orange, the Botelha, the White Orange, and some others, all varieties from the Azores, are of various degrees of excellence, and are all worthy of a place in an English Orange garden.

The following descriptive list of the dessert Oranges may be useful to the amateur:—Botelha and Dulcissima, both thin-rinded and very rich. Egg, very large, rind thick, remarkably juicy, but not rich; a great bearer. Embigua, or Navel Orange, very large, with a curious depressed calyx, remarkably rich and juicy. Exquisite, a thin-rinded, rich, and juicy fruit. Maltese Blood, large, oval, with a dark red pulp, exceedingly rich; good and distinct; fruit from the same tree vary in colour from deep red to the usual pale yellow colour, with faint streaks of red. St. Michael's, several varieties under this name vary in size and thickness of rind; they are all good. Silver Orange, colour of rind pale yellow, flesh pale, rind very thin, flavour piquant and delicious. Sustain, large, and remarkable for its rich sweet juice. St. Michael's Tangierine, a very distinct variety, differs from the common sort in being deeper in colour, smaller, and more rich in flavour; a charming little Orange. Tangierine, often incorrectly called the Mandarin, now a well-known sort, varying in shape from fruit much compressed with rind rough and thick, to oval with a smooth rind. Variegated Orange, this has a broad margin of white round its leaves, and forms a very ornamental tree; its fruit are oval, of medium size, with a pale yellow rind striped with green, very juicy, and remarkably brisk and piquant in flavour. White Orange, large, rind pale yellow, flesh very pale, flavour rich and good.

There are many various forms of the genus Citrus, which, in

a large Orange garden, may be cultivated, and prove of interest to the cultivator, but I have thought it proper to confine myself, in conformity with the heading of this paper, to the kinds of Oranges proper for our desserts. It may, however, be not thought out of place if I mention that the Lemon, more particularly the Imperial Lemon, is well worthy of a place in the Orange garden, as are also the Bijou Lemon, small, thin-rinded, and remarkably juicy, and the Small Lime, which is a concentration of acidity.

The insects which infest Orange trees are two varieties of scale, and also the green aphid. The former are easily destroyed by methylated spirits of wine, applied with a painter's brush, and the latter by quassia water, 4 ozs. of quassia chips boiled ten minutes in a gallon of water. This is also an excellent preventive to scale, if the trees are syringed with it once a week; it should be allowed to settle, and be perfectly clear. If the leaves become black or dirty, they should be sponged with warm water.

With regard to pruning fruit-bearing Orange trees, very little is required. The shoots that are vigorous, and diverge from the round heads of the trees, should be shortened in summer by pinching them to half their length; and in winter, if the heads of the trees are too much crowded with small shoots, they should be thinned with a sharp knife.

Oranges as cultivated in the Orange houses in France and England are, as is well known, generally dry and uneatable; this is owing to the trees, from having no artificial heat, blossoming in May and June. They often set their fruit freely, which swells towards the autumn, and ripens the following season late in autumn or winter. To this long-continuance on the trees is owing that dry mass of pulp so often found under a beautiful plump rind.

In these few remarks, I hope to be excused any lack of full and proper directions to carry out my conceptions. It is at all times difficult to tell people how to cultivate even a Cabbage; for unless full directions are given as to which end should go into the ground, it is just possible that a tyro in gardening would plant it head downwards. So it is in the higher branches of horticulture: it is only an outline that can be given in print, the picture must be filled in by observation and study. Ten minutes' showing will do more than ten hours' reading; still without the preparation of reading, the mind will not take in what is shown.—T. RIVERS.

GRAFTING EPIPHYLLUMS.

The usual way of grafting this plant on *Pereskia aculeata* in this country, where immense numbers are grown for sale, is by cutting a slit either on the side or at the extremity of the stock, just under a leaf, inserting one of the joints of the Epiphyllum, from which the epidermis has previously been shaven off, and tying with coarse wool. An experienced and handy workman performs the operation expeditiously, and with but a small percentage of failures, but then he must have a very large number of plants to choose his grafts from, and plenty of stocks of the required diameter, as any under that of a common lead pencil are quite useless for this kind of grafting.

For the amateur or gardener requiring but a few grafts, and without experience in the above-described method, the following is much to be preferred. It is so easy that any one may succeed, and has, moreover, the advantage of not absolutely requiring stocks of so great a diameter.

Having obtained stocks of no matter what age and diameter, so long as they possess, at the height at which it is wished to place the graft, sufficient fibrous texture to allow of their being cut in the shape of elongated wedges, the operator chooses a branch of five, six, or any number of joints, having at its base a joint which is rather thick and fleshy, as the joints usually are in such cases. This branch is to be cut across horizontally near its lower joint; the blade of a penknife is then to be plunged vertically into the centre of the cut to about the depth of an inch, thus preparing a hole for the wedge-shaped end of the stock, which must be inserted as far as the wedge extends. The only delicate part of the operation is to avoid splitting the branch when putting in the penknife, and afterwards in inserting the wedge; this is easily done with a little care. The stock is then to be tied to a stake a little longer than itself, and the branch tied to the upper end of the stake to prevent its drooping. This graft requires no ligatures, the elasticity of the tissues of the branch suffices to keep the cuts in juxtaposition.

In a shaded greenhouse, if grafting is done in May, or in a

shaded stove if done earlier, the graft will strike in a few days. I have sometimes grafted on a stock without roots, and struck both cutting and graft at the same time.

The *Pereskia aculeata* is by no means a fast grower; if not grown in a stove it requires at least three years to become as thick as a common lead pencil, and in either case is very long and unsightly, sometimes 6 feet and more, so that a method of utilising it for stocks when much younger is a great boon to the grower. Besides the advantages above enumerated, this kind of grafting when well done saves much time, as we may work a branch of such size as it would have taken a year or more to grow, had only a single joint been grafted as usual. I have even succeeded in striking as a graft the accidentally-broken off head of a plant fully a foot in diameter.

Next in importance to striking the graft comes the desideratum of an efficient support. The heads of *Epiphyllum* soon become top-heavy, and mere stakes never accomplish the purpose of keeping them straight and steady. I have imagined and long used the following support, which not only affords perfect steadiness, but is also simple and cheap, and shows off the plant to the best advantage. A diagram would explain it at once; but I will endeavour to do so in writing. First, I place my plants in small deal or oaken cases. I then bend an unannealed wire of the thickness of a lead pencil into the shape of an inverted U, thus— \cap , but square at the top, the two branches rather longer than the plant, which should be about 2 feet. I then bore two holes perpendicularly into the thickness of two opposite sides of the case, and drive into them the two branches of the \cap in a perfectly perpendicular position. I then make by soldering a wire hoop, say of about 2 feet in diameter, with two wires crossing each other at right angles, soldered together at their junction, and also at their extremities to the hoop, which then presents the aspect of a wheel with four spokes. This wheel is soldered horizontally to the square end of the inverted upright U. The whole forms a circular horizontal framework at the height of the graft, perfectly firm and steady, and on this the branches of the *Epiphyllum* lie stretched with their ends drooping all round it. A support of this kind painted green is so light that it is almost invisible, and anyone having once seen the beauty of a plant trained on one, will never again make use of the unsightly and inefficient stake.

Epiphyllums can be grafted on any species of Cacti; but the great advantage of the *Pereskia aculeata* over all others is that it requires but very little heat in winter to keep it in a state of vegetation. All the fleshy Cacti, including the fleshy *Pereskia*, such as *P. subulata*, *P. spathulata*, and *P. Poeppigii*, require a stove to keep them vegetating at the period that *Epiphyllums* bloom, say from November to March, and so do *P. Bleo*, *P. grandifolia*, *P. zinniaeflora*, &c., and even with all the heat you can give them, to water them at the time that the *Epiphyllums* require it the most involves considerable risk, and they are almost sure to rot at their base. In fact, as applied to plants for sale, they may all be considered quite useless as stocks.

For those who would wish to try the slit graft (*greffe en fente*), I will mention, as a caution, that the graft must be chosen among such joints as are neither too thick nor too thin. If too thick they keep the split ends of the stock so far apart at the bifurcation, that they often dry up and die. If too thin they have not substance enough left, for the joint being always more or less wider than the diameter of the stocks, often fully an inch—to enable the graft to be tied on, either a triangular nick must be cut away on each side of it, or a hole made on each side to allow of the wool clasping the stock; so that what with the shaving-off the epidermis on each surface of the joint, and nicking its edges, there remains but a very small amount of pulpy living matter at the place of tying, and if the operator draw the wool only a little too tight, he crushes this pulp, deprives it of its few living cells, and it dries up.—FREDERICK PALMER, *Versailles*.

MONSTERA DELICIOSA.—In the grand collection of plants at Dangstein, for which this place is celebrated, may generally be seen in fruit one of those strange species of *Arads* called *Monstera deliciosa* (or *Philodendron pertusum*, as it is now named), the great leaves of which are exceedingly ornamental, being slashed full of holes, and their edges fringed by the broad ligament-like pieces formed out of the uniform deep cuts towards the centre or midrib. The singularity of the fruit, too, is enough to make it equally attractive. It is oblong, about 12 or 14 inches long, rather curved, a deep sage green, marked all over the surface by hexagonal meshes. These meshes,

which are fleshy and easily separated from a soft, vinous, very fragrant pulp which lies beneath them, are the heads of so many ovaries; and so pricking are these to the tongue if it comes in contact with them that the person feels uncomfortable for hours afterwards. For a little foolish amusement, I have before now tempted persons unacquainted with the fruit to taste the under side of the covering, when they have declared that they should never forget it—not pain exactly, but uneasiness. When these heads are removed, the lower part of the ovaries, which is the part eaten, can be easily detached from the somewhat woody axis over which they stand in the closest possible order. I believe the plant is a native of the West Indies, and the fruit may be classed among the most delicious. At Dangstein it is cultivated in a house along with the graceful *Banana* and some other tropical fruits.—GEORGE NEWLTON (in *Science Gossip*).

THE CARDOON.

It is not a matter of much surprise when we find that amidst the horticultural bustle of the day some good and useful inhabitant of our gardens has been neglected so long as to become, comparatively speaking, almost lost; yet I venture to say such is the case with the Cardoon, as I have proved that not more than 2 per cent. of gentlemen's gardeners grow it, and those who do are not very particular in bringing it to perfection. Now, why is it so? If we judge by the writers of "Work for the Week," or "Doings of the Last Week," who very seldom, if ever, allude to the Cardoon, we might arrive at the conclusion that it is not worth cultivating. That the Cardoon is not exactly so I can prove, not only from its being so much in request here, but visitors who have tasted it have inquired what vegetable it was, how to grow it, and where to procure it.

To the best of my knowledge the Cardoon has been in this country upwards of two hundred years, and at one time it was rather extensively cultivated: but I believe the French have always been the greatest admirers of it, and they use it extensively for stewing, and for soups and salads. They profess to possess a much better sort than we have, but I can hardly think so, otherwise it would have found its way here before now. The only variety which I have grown is the Spanish Cardoon, which, when blanched, is very white and tender.

The culture of the Cardoon is so similar to that of Celery that it is unnecessary to enter into all the details here, but I may state that the plant requires a wider and deeper trench, plenty of manure, and abundance of water when growing. Under liberal treatment it attains 4 and even 6 feet in height, and its graceful form and silvery pinnatifid foliage has a very ornamental effect. Loudon, in his "Encyclopædia of Gardening," advises a light, deep, sandy soil not very rich; but I have found the Cardoon do better in one that is rather close and very rich. It must be grown rapidly to make it tender. I usually place the seeds in the trench, 18 inches apart, on the top of the manure, put three seeds in each hole, and when the seedlings are 4 inches high, I take away all but the strongest, and they will grow rapidly. The seed should be put in in April. The plants may either be earthed-up as they grow, or not until a month before they are required for use. I prefer the latter mode of proceeding, on account of the greater convenience which it affords of applying manure water to the roots.—THOMAS RECORD, *Lilloeden, Hawkhurst*.

EPIPHYLLUM TRUNCATUM CULTURE.

THIS *Epiphyllum* is very seldom seen in the possession of the amateur or humble cultivator, who without glass endeavours to grow a few plants for his window or little back garden, yet it is one of the many I have tried to grow, and I will in as brief a manner as possible state my mode of obtaining success.

In the first place, the smallest piece will grow, as "J. W." states. Such a piece as is broken off sometimes by accident, placed in a small pot, soon takes root. I have at the present time a small plant in a 60-sized pot, which has produced six flowers, and it has not had any artificial heat from first to last. It was struck in a 60-pot as above described, kept during the winter in the window of the sitting-room of the cottage, and placed near a Vine at the foot of a wall facing south, after all danger of frost was over. It remained there throughout the summer, and in autumn was removed to its former quarters,

where it produced six flowers, and at Christmas was our little pet for the festive season.

I was induced to make the trial from seeing plants of this *Epiphyllum* in the window of a farmhouse in Romney Marsh, where they have been grown for some years without being ever removed, except for domestic purposes, and during severe frost. The largest plant was in an ornamental pot between a 32 and a 24, which was raised to prevent its touching the window sill. The flowers on this plant numbered upwards of two hundred (actually counted), and it was a most beautiful object, of which the owners were not a little proud.

I thank "J. W." for one thing, and that is, as to watering during summer. I believe I was remiss in not placing a saucer under the pot; at the same time I do not understand "J. W.," as to "keeping cool and dry in winter." Surely the plant must not be kept dry when in full bloom.—W. J. B.

ROYAL HORTICULTURAL SOCIETY.

THE Annual General Meeting will be held on Tuesday, the 9th of February, at three o'clock precisely, and the chair will be taken by the President, or one of the Council of the Society.

The Council, in accordance with the charter and bye-laws, recommend for removal the following three members:—Lord H. Gordon Lennox, M.P., Mr. B. T. Brandreth Gibbs, and Mr. Sigismund Rucker; and they recommend for election in their places the following Fellows—viz., H.S.H. the Prince Teck, Lord Londesborough, and the Rev. Joshua Dix.

The Council recommend the following as officers for the ensuing year—viz.:—His Grace the Duke of Buccleuch, K.G., President; Mr. John Clutton, Treasurer; Lieut.-Col. Scott, R.E., Secretary; Mr. James Nicholson, Mr. John Gibson, and Mr. Robert Hudson, F.R.S., Auditors; Mr. Henry Cole, C.B., Mr. John Clutton, and Lieut.-Col. Scott, R.E., Expenses Committee-men.

A FEW GOOD KITCHEN VEGETABLES.

THE various trade catalogues, which come "thicker and faster," are, generally speaking, carefully compiled, and convey a great amount of useful information and seasonable advice; yet however sound this advice may be, and however honestly it may be given, it in many instances fails to be decisively convincing, and often affords cases of appeal to the higher tribunal of disinterested practical experience. For instance: A tradesman amateur comes with a bundle of trade lists in his hand, and solicits my opinion as to which is the best early Pea or the best Cauliflower to grow, as in one catalogue he finds an article honoured with black type, and with a good character appended, while the same article, or perhaps, more strictly speaking, the same name, is in another catalogue simply given in the ordinary way, and the character withheld, as if it had done something amiss. I am aware that these distinctive features have little or no influence on many, yet, on the other hand, I am equally well aware that they have a certain effect on others; and when on comparison cultivators find the honours so differently accorded, a certain degree of perplexity of mind is the result, and the case is forthwith taken to the "higher court."

A few decisions, then, direct from the said court will, I apprehend, be eminently useful. My list will be very short, and will consist of old or new varieties which I have grown and find good. I will give the character of my soil, also the name of the firm that furnished the respective seeds, and thus make the information as full as possible, so as to prevent as far as I can further inquiry or explanation. Let others do the same, and the uninitiated cannot fail to have something reliable.

My soil is light in texture. It is a black vegetable mould on a substratum of limestone. It has been devoted to the growth of vegetables for many years.

I will commence by enumerating a few varieties of *Peas* which answer well on such soil. The kind which I must put down as the best early is Dickens's 'First and Best.' The seed of this was procured direct from the raisers at Chester, and was therefore genuine. There is no doubt of this being a most valuable Pea; it is early, prolific, and robust in constitution. First Crop, synonyme Ringleader, was certainly two or three days the earlier, but all other good points were in favour of the Chester Pea. In another garden, on rather strong soil, I inspected the two varieties side by side, and First Crop there sustained its celebrity. In this comparison I should say that First Crop was obtained from Messrs. Carter, and Ringleader

from Messrs. Sutton, and all received treatment in every respect exactly alike. For a light soil, then, my advice is, Sow First and Best. In stronger soil First Crop may be equally prolific, and it is by a few days the earliest of the early wrinkled varieties. I find Maclean's Epicurean an excellent variety. It is a few days later than Advancer, but in all other respects it was with me the superior Pea. I pronounced it in all points excellent. Champion of England on this soil never fails; but for a second early, very good, and cheap Pea let me pay a tribute to the merits of Princess Royal—nothing gives me a better return than this very useful sort. As late kinds I suppose Hairs' Dwarf Mammoth and Ne Plus Ultra are good anywhere—at all events they are fine on this soil. Carter's strain of the former Pea I find remarkably pure and good. The other stocks were from the same firm, also from Messrs. Sutton, and were equally true and fine.

Peas, from their general importance, have received a more lengthy notice than I shall accord to other vegetables. I must say a word in favour of Turner's Incomparable Dwarf White Celery, and I would ask cultivators not to condemn this variety until they have sent a dozen stamps to Slough. This is the only reliable way that I know of to obtain it pure. I grow no other sort, for the simple reason that hitherto I have found none answer my purpose so well; and my purpose is to produce a great quantity of the first quality from a small extent of ground.

I will now name a vegetable of a value which I consider entitles it to a place in every garden. It is *Asparagus Kale* (Carter's strain). It is more hardy than Brussels Sprouts, and in flavour is most delicate and delicious. If, as "D. Deal," would say, one could fancy it had just a "whiff" of its more aristocratic namesake it would be none the less enjoyable. This is certainly a very valuable vegetable, and quite distinct from all other winter greens. In addition to these remarks I will give a sort of collective testimony in its favour. Three years ago I distributed my surplus plants amongst the tenants and tradesmen; and so well did they like it that they treated their neighbours with an occasional "boiling," and every year I am now literally inundated with applications for "them light-coloured greens." Applications are even now being made for plants for fear of being too late. To those who have not already grown it my advice is, Procure it true, and give it a trial.

The few following vegetables which I will name were sent me for trial last spring by the firm last named. I have not yet given in my report. Beet.—After growing most of the popular kinds of this root I find Carter's Perfection Salad superior to most, and equal to the best, equally good in shape, colour, and flavour, and in my opinion as a salad Beet it would satisfy any one. Dwarf Mammoth Cauliflower is a variety of sterling merit. It withstood the tropical heat of last summer better than three other varieties grown by its side, and up to the present time continues to produce compact and serviceable heads. Peabody Pea was of no use last summer on my hot and light soil. Of Giant White and Giant Bath Cos Lettuce, the former is a splendid summer Lettuce; the latter is also a fine kind, but I do not like it so well as its more compact prototype the true old black-seeded Bath Cos. This has been perpetuated here for private use for thirty years. Those, however, who prefer a large kind have it to perfection in the Giant variety above named.

I will not extend my list, but will leave room for other cultivators who may be so disposed to name anything which they have proved to be specially recommendable. I have known the time when such information would have been much valued by myself, and I assume that there are many now in the position which I once was, and to whom such experiences will be particularly seasonable. On another occasion I will notice a few of last year's novelties in flower seeds.

I must add what a splendid late Broccoli is Cattell's Eclipse. I saw it exhibited in June last in size and quality truly grand, and it was grown by our excellent occasional pomological correspondent "C. C. E.," but of "C. C. E." and his fruit garden more anon.—J. W.

POTATOES IN THE UNITED KINGDOM.—The total number of acres in England, Scotland, Wales, the Channel Islands, and Ireland, planted with Potatoes in 1867 was 1,500,624; and in 1868 there were 1,584,213 acres.

THE MAIDENHAIR FERN.—Many years ago I was laughed at for saying I had seen this Fern growing out of my reach in the

Isle of Portland. I am, therefore, well pleased to make the following extract from a letter just received:—"It may, perhaps, interest you to hear that *Adiantum capillus-Veneris* has lately been found in the Isle of Portland."—G.

CUCUMBER CULTURE.—No. 4.

PRUNING AND TRAINING.—The first pruning or stopping should be performed when the plant has pushed so as to have two joints or leaves in addition to the seed leaves, the growing point being taken out immediately above the second joint. This stopping will cause the production of two or more shoots, which in their turn should have the growing point pinched out as soon as it can be done without injury to the leaf to which the shoot is stopped, which will be the case when the growing point is clear of the leaf. The point of the shoot must be removed with the end of a sharp knife, and not by the finger and thumb, which, like scissors, more or less bruise the shoot, and the wound does not heal so well as that from a clean cut. The second stopping should take place when the shoots resulting from the first stopping have made three joints or leaves. These stoppings will cause the production of a sufficient number of shoots to cover the bed or fill the frame, and are what I consider proper, though when the seed is new it may be well to stop the plants more closely, taking out the points of the plants when they have made one rough leaf, and repeatedly stopping every shoot at the first leaf afterwards up to the fourth joint, and then allowing the shoots to make four joints, when their points are to be pinched out. By either of the above modes of stopping or preparing the plants, a sufficient number of shoots will be produced from near the root, which is desirable, so that there may not be any waste of space, and by stopping we call into activity parts that otherwise must remain dormant, and the plants come sooner into bearing than if left to their own free growth.

Of the shoots resulting from the stopping above described, six or eight of the strongest must be selected and trained over the surface of the bed directly towards the sides of the frame, allowing a distance of 12 inches between each. If two plants are placed in each hill or light, then three or four shoots only will be required from each plant, or the number of shoots required to fill the frame, 12 inches being allowed between the shoots, which I will, for the sake of distinction, term principal shoots. In the case of one plant under each light, the shoots must be equally disposed towards the back and front of the frame, making choice of shoots, if possible, of corresponding vigour. These principal shoots will push laterals, or secondary shoots, which will serve to fill the frame and bear fruit. The principal shoots will also answer for the latter purpose, showing fruit very often at the second or third joint; but in that case take out the points of the shoots two or three joints above the fruit, and if one of the principal shoots is stopped, take out the points of all the principal shoots, so that there may be an equal length of extension in all, as well as a corresponding production of lateral or secondary shoots. Of the shoots pushing after the stopping, select the strongest, and train it in as a continuation of the principal shoot; but if no fruit show on the principal shoots, allow them to grow until within 6 inches of the sides of the frame, then take out their points, and the result will be a number of laterals, which will show fruit abundantly at the second or third joint.

The laterals must not be allowed to grow too thickly, but be kept regularly trained, and at such distances along the principal shoots that each will receive a due amount of light. They are too few when there are bare places, and too numerous when they cross, or the leaves have not room to develop themselves fully; the shoots must not cross or become entangled, and the foliage must not be crowded. The plants are then healthier and produce finer fruit, therefore so thin the laterals (always leaving a sufficient number to bear fruit), that the frame will be sufficiently filled, and yet that all the foliage may receive proper exposure to light; and in thinning, remove the weakest at an early stage of their growth, for it is a waste of the energies of the plant and a drain on its resources to allow the shoots to become confused and entangled, and then to effect a clearance all at once by pruning away large quantities of shoots and foliage at one time. This is often a cause of immediate evil and disease, for it is impossible to remove a large number of shoots without causing more or less bleeding from the wounds, whilst the removal of large quantities of foliage causes the stems or shoots, and especially the old principal

shoots, to be so gorged with crude sap, that they not only become ruptured or ulcerated, but the fruit also is affected by the same malady; a glutinous substance exuding and rendering the fruit very hard and unwholesome, and the parts so affected do not swell equally with the rest, giving a very unsightly appearance to the fruit.

Foresight will need to be exercised to keep the shoots in order, and to secure an abundance of fruit in succession. This will be effected by securing growing as well as bearing shoots. The laterals should be stopped one joint above the fruit, but if there be little space the point may be taken out at the joint where the fruit is situated; but if it be desired to have growth from the joint to which the shoot is stopped, then it is well to stop at the joint next beyond the fruit, and in a short time it will be seen whether or not a shoot will push from the same joint as the fruit, which being the case, it is easy to cut away the part of the shoot above it. I would in all cases, except when the shoots are very much crowded, advise the stopping of the laterals one joint beyond the fruit, and leave the shoot with two joints, until it can be seen whether or not a shoot will push from the same joint as the fruit, and if one does so, remove that which is above, if not, allow both to remain. All laterals not showing fruit at the second or third joint should, if there is room, be stopped at the second or third joint; but if there is not room for the proper exposure of the leaves to the light, then cut away all or part of the unfruitful laterals, always preserving some that are well disposed, in order that they may succeed those that have borne fruit. The latter, when they are worn out and have the stems long and bare, should be cut back as near to the stem of the plant as practicable, training a young shoot advantageously situated in the place of each, and stopping it so as to produce laterals, if it do not show fruit at the fourth joint, immediately above that joint; and by this removal of the principal shoots which have fruited, or the cutting-out of the unfruitful laterals, space will be gained for the training-in of fresh young shoots, which are needful to secure an abundance of fruit in succession.

The removal of unfruitful laterals and worn-out shoots should not at any time be general, but partial and continuous, so that a succession of young bearing shoots and fruit may be secured, for if the shoots are left after bearing until the frame is very closely filled, and these have all produced fruit, it follows that there will be a general cutting-out or back and thinning, and some time must elapse before the plants can be furnished with young bearing shoots, and the succession of fruit will not be maintained. The pruning, stopping, and thinning must, therefore, be frequently attended to, the plants being gone over once or twice every week for the purpose; and by attending to the above directions they will not suffer from a sudden and great deprivation of foliage at one time, and in consequence will be able to bear fruit abundantly and in succession, and will be less liable to disease.

After the bed has been made some time its surface will often become close from the frequency of the watering. It is very conducive to the health and fruitfulness of the plants to occasionally remove the surface of the soil to the extent of about an inch, scraping it off without injuring the roots more than is unavoidable; the soil being scratched or pointed over with a wedge-like piece of wood, and the surface being removed, fresh soil should be spread in its place to the depth of about 1½ inch, layering any long weak shoots into the soil, and covering them with it at a joint. Secure the shoot by a peg, and fresh roots will push from the shoot to the extent of the part layered in the soil, and it will grow with the vigour of a young plant. This top-dressing may be done twice or thrice in the course of the summer, and the shoots being layered into the soil, and the pruning carefully attended to, so as to keep up a succession of young shoots, the plants will continue healthy, and bear fine fruit in succession throughout the summer. Each time the top-dressing is repeated the frame should have a thin mat thrown over the lights from 9 A.M. to 4 P.M., on bright days, for a period of three or four days, and the plants should be kept rather close and moist, so as to secure the quick-spreading of the roots in the fresh soil, and the early recovery of the plants. In this treatment the plants evidently delight, as it is invariably attended with an increased degree of vigour in them, and of size and quality of fruit. It is not necessary to top-dress or layer the shoots until the plants have been cut back or thinned out after they have filled the frame, fruited, and become weak, and then it may be done at intervals of a month or six weeks.

KEEPING THE FRUIT STRAIGHT.—The fruit, especially in hot,

dry weather, are subject to become crooked. The best means of keeping them straight are glass tubes that are made for the purpose; but they are costly and liable to breakage, therefore three pieces of wood may be nailed together, having a piece or strip for the bottom 3 inches wide, and to the sides of this strips 2½ inches wide may be nailed, so as to form sides, the whole having the appearance of a box without ends or lid. These are sometimes lined with strips of glass, but I do not consider such necessary, though the fruit is said to grow more freely in those lined, which effect, however, I consider has no existence except in the imagination. The boxes will need to be of different lengths according to the length of the fruit of different kinds; a number can be made very easily, and they are very useful, and answer every purpose of keeping the fruit straight, quite as well as the glass tubes.

ARTIFICIAL FERTILISATION.—It was a very common opinion at one time that to effect the setting of the female flowers, and secure the swelling of the fruit, the former should be fertilised. This opinion has been some time exploded, fertilisation of the female flowers not being necessary, except when seed is required. Fertilisation of the female flowers ought not to be practised when the fruit is grown for use, as the fruits containing seed are not nearly so free in swelling, and they swell irregularly, and seeds are a great blemish in a Cucumber for table. Though the fruit for use is best unfertilised, for seed the female flowers should be fertilised with pollen, for the Cucumber produces male and female flowers on the same plant. The female flowers are borne at the end of the embryo fruit, and consist of petals and stigma, having all the organs of fructification, except the stamens, the male consisting of petals and stamens only; and it is the yellow dust or powder on the latter that must be placed on the stigmas of the female flowers. It should be done when the flowers are fully expanded, and during the early part of the day.

AFTER-MANAGEMENT OF THE BED.—The frame will frequently sink after the dung begins to rot, and it becomes so deeply imbedded that the plants are too near the glass, owing to the dung beneath the soil of the bed not decaying in a corresponding degree. The plants' foliage should never be allowed to touch the glass, as it will be liable to scorch; therefore, so raise the frame by placing bricks on flat under the corners, that there will be about 1 foot space from the soil to the glass, and it is well if it do not exceed 15 inches. In raising the frame see that any cracks made in the soil are filled up, closing any interstice between it and the woodwork of the frame, and press it down rather firmly, so that in watering the water may not run off without wetting other portions of the bed. The linings around the frame, after the latter is raised, should be made good to the sides of the frame with dung or litter.—G. ALBET.

WINTER MANAGEMENT OF PELARGONIUMS.

THE remarks of Mr. Peach on the winter management of Pelargoniums may be said to illustrate two extremes in the wintering of a class of plants, the right method of doing which is very simple.

The system of management quoted by your correspondent as being that recommended by many gardeners is one which, I venture to assert, no good gardener would either recommend or follow himself if he could possibly avoid it. That hundreds of gardeners do keep the most of their stock of Pelargoniums in cutting-pans is doubtless right, but that many are kept in the same pans till required for the beds can hardly be so correct; for even if there is no space under glass, nor any pots to be had, yet, with a little management, a good start may be given to the plants long before they are wanted for the beds. In support of this assertion I may instance a plan I have successfully followed in such an emergency, which, although it may not possess much merit or the score of originality, yet, as being an excellent makeshift, may be worthy of note.

The plants are shaken out of the cutting-pans early in March, and planted thinly in a rich free soil on a warm border, and protected by means of a rough kind of frame made of some 9-inch boards, nailed together to form the sides, over which thatched hurdles are put at night and during cold windy days. Plants so treated make a quick strong growth—so strong, in fact, that they are not unfrequently larger and better plants by the bedding season than those which have passed the winter in separate pots. I do not, of course, pretend to infer that crowding a number of plants together in cutting-pans is by any means the best method of wintering them—far from it; but

when a gardener must keep a stock of many thousands of plants through the winter, unless he is better provided with spare glass houses than most of the fraternity, he will gladly avail himself of any practical contrivance which may offer.

With regard to the other system which is so strongly recommended by Mr. Peach, it seems to me to be a matter of regret that the treatment of a class of plants, whose proper management is simplicity itself, should be made to appear so difficult and expensive as to dishearten vast numbers of the readers of "our Journal," who have no such resources as your correspondent appears to possess. Again, as to the "work of destruction" in taking cuttings, he must be a poor gardener indeed who is unable to take a cutting or two off each plant without materially affecting its appearance. In the case of new or scarce varieties, of which it may be desirable to increase the stock as largely as possible, Mr. Peach's plan may be applicable, as then every cutting to be had would be utilised; but so far as regards the general stock I for one must prefer an earlier, more easy, and more certain method of propagation; I also do not think it is at all likely that many employers will be inclined to put themselves to the expense of erecting houses specially for bedding plants while these can be wintered so easily, and so well too, in such places as vineries at rest, orchard houses, and, in fact, in any cool house that has a spare shelf or two.

And now a few words on checking damp amongst Pelargoniums in cold pits. I have lately tried several experiments, such as sprinkling charcoal dust over the surface of the soil and amongst the plants, which doubtless does some good; but the most effectual remedy is to scatter over the damp foliage enough dry silver sand to absorb the moisture, which evaporates more quickly from the sand than it would otherwise have done. When the sand appears to have become quite dry again it is dusted off the foliage with a soft hair brush, and this process is repeated as often as it is necessary with the best results.—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

GARDENING IN TOWNS.

MY first operation to commence the year is with bulbs. As the borders and beds are all filled with Chrysanthemums up to December, I am compelled to put in nearly all the bulbs temporarily under some trees. In the first week in October I fork up the soil and spread 6 inches of loam and leaf mould, one-half of each, well mixed together, all over the piece of ground. When the surface is levelled I put in the Hyacinths, Tulips, and Narcissuses 4 inches apart, and the Snowdrops and Crocuses 3 inches apart. They are then covered over with rotten leaf mould or cocoa-nut fibre.

In December, when the Chrysanthemum bloom is over, I take up the bulbs, lay them in temporarily, and fork up the beds, mixing with the soil a little rotten dung and fresh loam. I then level the beds, and with a hand-fork carefully lift the bulbs from their temporary quarters, place them on a hand-barrow, and take them to the prepared blooming beds, being careful not to break off more roots than can possibly be avoided. The Hyacinths and Narcissuses are planted from 6 to 8 inches apart, each variety by itself, so that those in each bed are all of one height and bloom at the same time. The Crocuses and Snowdrops I plant round the outside, so that when their blooming is over the foliage forms a green edging for the other bulbs. The Tulips I plant 4 inches apart in the same compost, but with a slight sprinkling of sand on the surface to keep away worms.

When the bulbs are placed on the beds the whole are covered to the depth of 3 inches with light loam, then with 2 inches of cocoa-nut fibre. If they could be all grown in 5-inch pots and plunged they would bloom much better when turned out of the pots, but this I am not able to do; still, in the way I treat them they bloomed well last year, there not being one shabby flower out of some hundreds. If very sharp frost sets in I stick in and bend over some long hazel sticks, and throw mats over the top.

The following are the varieties I find best for border culture—**HYACINTHS.**—*White.*—Grand Vainqueur, Anna Paulowna, Grandeur à Merveille, Richardson, Grande Vedette, and Hannah Moore. *Blue.*—Baron Von Tuyl, Charles Dickens, Belle Africaine, Orondates, William I., and L'Ami du Cœur. *Red.*—Robert Steiger, Amy, Charlemagne. *Pink.*—Belle Corinne, Norma, L'Ami du Cœur, and Jenny Lind.

TULIPS.—*White.*—La Candeur, Pottebakker, Royal Standard.

Yellow.—Yellow Prince. Scarlet.—Rex Rubrorum, Waterloo. Scarlet and Yellow.—Tournesol.—SAMUEL BROOME, Temple Gardens.

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

(Continued from page 41.)

DID it ever occur to "ARCHAMBAUD," to consider the amount of space unoccupied upon cottages, barns, and other buildings, against which Vines could be planted, and made to bear enormous crops of Grapes, merely by common attention given to their training? I have no hesitation in saying, that our ugly naked English walling, so beautified and economised, would in a great measure compensate in productiveness for the soil at present lost for cultural purposes from being taken up by railroads.

I planted the Espiran and Royal Muscadine Vines against the walls of this house, to grow Grapes for wine-making, about the period that the first number of THE COTTAGE GARDENER was issued (1848). For years I was chaffed and pooh-poohed for my pains, but I have changed all that through never allowing an opportunity to escape of advertising in these pages to out-of-door Grape-culture, and to the subject of home-made wine, and by never failing to exhibit results at our chief exhibitions of horticultural produce. From the walls of this house, aye, even aspiring to the chimneys, I gathered 500 lbs. of beautiful Grapes last October, and purchased 40 lbs. besides from my man, who grew them upon the walls of his cottage. The whole has produced us 75 gallons of wine, which proves everything that I could desire, and yet to grow Grapes here may be termed "raising them under difficulties." The situation of this house is high and bleak, and we are exposed to violent south-westerly gales, which sweep piercingly over a melancholy lake. The Vines are also, in a great measure, shaded by trees, which merely leave an opening sufficient to admit the concentrated force of the blast. I merely mention this in passing, in order to prove that our climate can be depended upon for Grape culture very far north, where there is a good aspect on houses or garden walls, and the Grapes will produce a beverage far superior to those unwholesome compounds too commonly sold as wines.

I do not think it well to complicate my subject by recommending too many sorts of Grapes. The very best hardy white Grape for any aspect, from south-east-by-south to north-west, is the Royal Muscadine. Due south it will ripen its Grapes in nine seasons out of ten, and always on all the above aspects sufficiently to make a good sparkling wine.

The Espiran ranks second with me as a red-wine Grape. It hangs late before it begins to colour, but when it does begin to do so it makes up for time, and it produces a rich sparkling, or still wine of the true vinous flavour, according to fancy. On good southern aspects, as a dark Grape, the old Black Hamburgh would be most generally suitable for eating-purposes, and it makes an excellent wine as well, though not equal in piquancy to that from the Espiran. It is also more tender in its constitution.

In following out this subject, I intend to confine myself to the spirit of "ARCHAMBAUD'S" articles, and to keep within the scope of the million, and I hope to show from beginning to end that the affair is a simple and economical process, for, excepting making the borders—the next subject I shall write about, as it must be seen to directly—and planting, training, and pruning the Vines above "arm's reach," the time of a working man need not be trespassed upon, as most other matters could be easily managed by his wife.—UPWARDS AND ONWARDS.

(To be continued.)

Now that out-door Grape-culture is being discussed, a few words which I shall offer on the subject will, perhaps, not be out of place.

The locality to which I refer is in North Lancashire, and in a direct line about five miles from the sea; there, from a wall about 180 feet in length, I have had a fair crop of Black Hamburgh Grapes, the berries of good size, well ripened, and of fine colour and flavour, and as regards the last two qualities, in my opinion surpassing many of the hothouse Grapes grown at the present day.

I think I am not mistaken in Black Prince, and if I am not so, it is very different from what "ARCHAMBAUD" says of it.

Its bunches were very fair in size, and very black; but although the skin of the berries is rather tough or leathery, it is far from third-rate; in fact, I think a connoisseur would be quite satisfied of its being nothing short of second-rate.

Another point I wish to mention has reference to a system which is not in common use. What is it possible to do with flued walls, or hollow walls with flues to run through them, burning up the cinders which are cast out from the mansion? By this means one would be able to assist the ripening of the fruit and of the wood, which latter, in my opinion, is the main point, for unless the wood is well matured, we cannot expect success. The first outlay in building the wall will be a little greater than for an ordinary wall, but the expense of constructing the furnace would be very small—little more than the doors and fire-bars, with brickwork, being required, and the work could all be done by an ordinary bricklayer. The Grapes above referred to are from a wall of this description, and this may have altered the quality of Black Prince.

I quite agree with "ARCHAMBAUD," that it is to be regretted open-air Vines are so much neglected, for I fully believe Grapes will pay for all the care anyone may take of them, and should they ever fail to be good enough for the dessert, then the wine they make would be far before most home-made wine, and the cost no more.

We are about to add a vinery for earlier work, but the wall Vines will be expected still to do duty. I shall, if it be thought interesting, report the result of my success next year in growing Grapes with heated walls.—H. B.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

BRASSIA LAWRENCIANA var. *LONGISSIMA* (Lawrence's Long-sepalled Brassia). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Costa Rica. Flowers orange, purple-blotched, fragrant.—(*Bot. Mag.*, t. 5748.)

IBERIDELLA ROTUNDFOLIA (Round-leaved Iberidella). *Nat. ord.*, Cruciferae. *Linn.*, Tetradynamia Siliculosa.—Native of Carinthian Alps, at elevations from 6000 to 9000 feet. A beautiful rock plant; flowers lilac.—(*Ibid.* t. 5749.)

TACSONIA ERIANTHA (Woolly-flowered Tacsonia). *Nat. o. d.*, Passifloræ. *Linn.*, Pentandria Trigynia.—Native of the Ecuador Andes, at elevations of from 11,000 to 13,000 feet. A graceful greenhouse or conservatory climber. Flowers lilac, flushed with yellow.—(*Ibid.* t. 5750.)

STAPELIA HYSTRIX (Bristly-flowered Stapelia). *Nat. ord.*, Asclepiadaceæ. *Linn.*, Gynandria Pentandria.—Native of South-eastern Africa. Flowers pale yellow, dotted with purple.—(*Ibid.* t. 5751.)

THIBAUDIA ACUMINATA (Sharp-leaved Thibaudia). *Nat. ord.*, Ericaceæ. *Linn.*, Pentandria Monogynia.—Native of Columbian Andes, at elevations from 8000 to 10,000 feet. Introduced by Messrs. Veitch. Flowers scarlet, yellow-tipped. Fruit fragrant and eatable.—(*Ibid.* t. 5752.)

COLEUS—*Queen Victoria*.—"No family of plants has, in modern times, so speedily acquired notoriety as that of the Coleus. It is not so long since that our gardens could boast only a few weedy species, of which the most important was the "Nettle Geranium" of cottage windows. Then came C. Blumei, the red-stained leaves of which first drew attention to the family as ornamental-foliaged plants; this being followed by C. Verschaffeltii, the still brighter colours of which have been turned to so good an account in conjunction with the silvery Centaureas for summer bedding purposes; and this, again, being succeeded by the almost black-leaved form of C. scutellarioides known as nigricans, the purple-veined C. Gibsoni, and the green-edged C. Veitchii.

"The foregoing, with one or two trifling sports, were all that we possessed up to the beginning of the present year, when a set of a dozen novel hybrids, raised in the Chiswick Garden of the Royal Horticultural Society by Mr. Bause, on their appearance in public created quite a furore, and realised, when offered for sale at Stevens' Auction Rooms, the large sum of £393. These included frilled-leaved, plane-leaved, and reticulately-marked forms, represented respectively by C. Bausei, C. Saundersii, and C. Scottii; but the ground colour was green, with markings of a deep chocolate purple. What the value of these new sorts as bedding plants may be has not yet been fairly determined, but they are certainly very beautiful objects, if only suitable to be grown as pot plants for conservatory decoration.

"During the past summer C. Telfordi, a yellow-leaved sport from C. Blumei, was announced. This, from the contrast between its yellowish margin and chestnut-red centre, proved to be a very pretty in-door plant; and taken in conjunction with the appearance of golden-leaved forms of so many other popular subjects, gave rise to a desire for golden-leaved Coleuses, which Mr. Bause was not long in satisfying; for in the past autumn, on crossing some of his former seedlings with C. Blumei itself, he succeeded in producing a batch of most brilliant-coloured varieties, far exceeding all that had been previously known, and of which the beautiful plant we now figure is one. These new varieties are of indescribably rich tints of bronzy crimson, with a peculiarly lustrous glow which gives the effect of shot silk—the shot colour being in some cases of a brighter crimson, and in others of a magenta purple, while the margin is of a decided greenish yellow, differing in width in the different kinds, and forming a bead-like edging. That which has been named Queen Victoria, and which has passed into the hands of the Messrs. Lee, of Hammer-smith, is the brightest in colour of the whole series; while in the same style, but differing in tint as well as in breadth, either of blotch or margin, are others named Princess Royal, Princess of Wales, Duke of Edinburgh, and Her Majesty.

"The same batch of seedlings yielded in Albert Victor an equally desirable acquisition, having tricolor foliage. This is of a very bold habit of growth, the golden margin broader than in most of the other sorts, and the bronzy red centre stained with large blotches of a deeper purplish red. Prince of Wales resembles it in the blotching, but has scarcely any yellow at the edge. To these have to be added some forms of the C. Gibsoni race, obtained at the same time, and equally in advance of all previous varieties of that type; they are of a yellowish green, more or less veined and blotched, but the colour is a bright purplish red, instead of the heavy, almost black, purple of the older forms. These latter have been named Prince Arthur and Princess Beatrice.

"We have certainly acquired in these golden varieties of Coleus some of the most beautiful-leaved plants of which our gardens can boast. Whether they will be available for the outdoor garden remains to be seen. The question will, however, soon be set at rest, as they will be distributed in quantity, in time for the next summer's planting; and from their vigorous growth they may be expected to succeed at least as well as those previously grown."—(*Florist and Pomologist*, 3 s., ii., 1.)

GARDENING IN THE WEST.—No. 5.

PLANTING is not the only process of the gardener's art that is deeply affected by the influence alluded to in previous papers; others, and among them grafting and budding, are changed in practice quite essentially. It becomes necessary to cut scions of almost all kinds before Christmas, for if left until spring it is common to find the young wood of Cherries, Plums, Apricots, &c., quite discoloured, like the flesh of a bruised Apple. Twigs thus injured will expand leaves in the spring if not detached from the parent tree, and a layer of new wood will coat over the "bruised heart," but such twigs cannot be depended upon for use as scions.

Sometimes, after very early and severe frosts, a deformed amorphous opening of the buds in the spring shows the stage at which the internal development had been arrested. I remember two seasons—one in 1865, when the thermometer sunk to 12° on the 11th of November, and one many years previously, when the cold was yet more severe, and a late, protracted growth was less prepared to meet it. In the spring very few buds opened on the annual shoots, save the terminal buds, which opened in all cases, and the blossom buds of Cherry trees exhibited a grotesque unfolding of mingled bracts and leaves, and occasionally a portion of a cluster of blossoms, or perhaps an imperfect single blossom after a long delay in coming forward, like a late riser, unkempt, ungartered, and down at the heel. These were lessons disclosing something of the inner life of plants, proving how much goes on silently within the buds, unseen to the external observer, like the hidden shifting of scenes between the two great spectacles of Autumn and of Spring.

Of course the concurrence of such seasons is very disastrous to Peach trees, Apricot trees, and other tender woods. On cutting off a branch of five or six years' growth, the character of each of these seasons is exhibited very obviously by the great variations in colour and texture apparent in the different

annual layers. Injuries of this sort, continually repeated and aggravated by the effects of that denudation of vast districts of their damp-retaining, sheltering forests, to which allusion has been made, have so enfeebled the constitution of the Peach tree in America, that it is in a continuous rapid decline. Yet the Peach is the favourite above all fruits, especially grateful in the hot, dry American autumn, the most piquant, enjoyable, and wholesome, the most innocent, and hitherto the cheapest of all luxuries. In seasons of scarcity the most extravagant prices are paid to the fortunate owners of well-situated and productive Peach orchards; but they can never be had in such perfection, or so fully enjoyed, as when they are grown at home and fully ripened: hence the gardener is wanted abroad to teach people how to procure crops, which they can yet do at a fraction of the expense that is given to the culture in Europe.

But to return to the subject of grafting. In placing the scions they are made short, in order to have but little surface exposed to the withering winds, and, for greater security, one bud is left close to the stock and under the wrapping, and this often grows when others are parched. The wrapping, too, is not made of clay, which would crack, and which is unpleasant and inconvenient to use. Instead of it shreds of thin, worn cotton cloth rolled on a little stick and soaked in soft grafting-wax melted, are used for whip-grafting; they are easily and quickly applied in a single spiral lap, they seal the wound securely, and the equipment is so simple, and the process so easy, expeditious, neat, and successful, here as well as there, that it is a wonder to find it so little used. The top of a tree or shrub can speedily be changed in this way with no greater violence to it than that of the annual shortening-in.

The scions are carefully taken from the ripest external shoots with firm thick wood and well-varnished bark, and when put on early a thin film of the wax is often drawn over them, or a light paper cone is slipped over them as a protection from March winds. This paper protection reminds me of a simple contrivance which I have seen used very successfully to protect newly-planted seedlings, cuttings, &c., from parching. Five or six old hoops or willow rods are bent over a little bed of the plants, and over all a newspaper is spread, its margin being pressed a little into the soil to keep it in place. It remains until, perhaps, washed down to the soil by heavy rains, and there it serves as a useful mulching. A sifting of mould will hide its staring hither look.

Buds are so quickly placed in safe shelter under the bark and in the cambium of the stock, that there is little need of variation of process. Yet for some reason, probably because of its saving of one or two movements, it is almost universal in the States to allow the wood to remain in the shield of the bud, and to use buds of the ripest wood to be found, such buds being found to resist decay better than the greener ones, which must necessarily be used when the wood is taken out. They are also more easily preserved, and as the U.S. post-office regulations allow scions, plants, and seeds to be sent as articles of traffic or otherwise at very low rates, the mails are loaded with packages in oiled paper, oiled cloth, and tin cases; many houses doing extensive business in sending out plants, roots, &c., wholly by mail. The new and excellent sorts of Potatoes originated by the late Rev. C. Goodrich have been very widely diffused in that way, to the great advantage of every recipient, and of the country at large.

The favourable effect of dry, clear air on the ripening and flavour of fruits has been alluded to. It is made conducive to their preservation too. In September the yards of almost every dwelling in the country are garnished with drying boards or tables, or with chest-like portable driers, which unfold to the sun and close up tightly in wet weather—tightly, excepting a draught below to keep a little stove going inside, and openings above for the escaping moisture to pass off freely, for the operation should be completed within twenty or thirty hours, and without a high temperature, so as to produce but little change of colour and flavour. Vast quantities of dried Apples, Peaches, &c., are kept for sale at the groceries, as Currants, Raisins, and Normandy Pippins are here.

On account of the greater certainty of crops of the small fruits, such as Strawberries, Raspberries, Blackberries, Grapes, &c., which either grow near the earth or can easily be laid near it during winter, their culture is continually increasing, superior varieties are coming forward, and the amounts grown and acreage planted for city consumption are immense. But they are very imperfect substitutes for the larger fruits; and it may be said again that there is a grand open field of usefulness, honour, and profit for the skilful gardener who knows "what's

the matter" and how to right it, when trees refuse to yield their accustomed tribute. Severe climates seem to bring out the gardener's powers, and in Canada and the States there may be as great triumphs effected over natural obstacles, as Scotland can now so proudly show.

Among the mountains, valleys, and on the western plains, where the air is driest, no moss is found on trees, excepting a little on the base of the north side only, and this often serves as a most useful guide to wanderers in the woods; nor are Apples, &c., discoloured by extraneous lichen-like blemishes on the surface, excepting in humid sheltered spots. Near the lakes, and especially near the great cataracts, there is constant moisture, and Peaches or other delicate trees and shrubs flourish there better than they do among the Alleghanies, three hundred miles further south. At Rochester, on the southern shore of Lake Ontario, there are a score or more of great nursery establishments, some of them occupying several hundred acres individually. It is the distinguishing business of the city. They are protected not only by the vicinity of the lake, and by having their north-westers tempered by the vapour of the great falls of Niagara, but also by the falls of the Genesee within the city, from which vapour is continually diffused. Further north, in Canada, the humefaction of the air is secured in summer by the proximity of lakes in all directions, and the winters, although dry, are unbroken. Snow increases with the increase of atmospheric moisture. It lies constantly, and thus, although the cold is intense, plants in the ground are securely landed in the lap of spring.—PENNSYLVANIA.

POMOLOGICAL GLEANINGS.

It is not the charming little Tangerine Orange alone that is to usurp the place in ORANGE CULTURE. Mr. Rivers has sent us specimens of the true St. Michael's, large and beautiful, and perfectly ripened. A Malta Blood Orange which was among the rest, for excellence of flavour and a peculiarly ethereal aroma never met with in imported Oranges, was the very perfection fruit. "Do not skin them, but pare them with a silver fruit knife," said Mr. Rivers in a note accompanying the fruit. The fact is, the fruit are so succulent they are positively brittle with juice, and cannot be "skinned."

—THE GOOSEBERRY APPLE.—But few people know the excellent qualities of this Apple, as it does not succeed well unless on chalk. The finest and most perfect fruit I have ever seen are from trees on the chalk cliffs opposite St. Catherine's, Guildford, the staple of the garden so shallow, not 15 inches deep, that one wonders how the trees can grow and bear so well. From these trees the fruit is of a pale straw colour, and their shape much like the White Calville (Calville Blanche), or, perhaps, more resembling the Keswick Codlin, but with less prominent ribs. A few days since I tested the Gooseberry Apple with the White Calville, in their cooking qualities; one would never believe the great difference in the flavour of two Apples, so much alike in appearance. The former was brisk in flavour, with a delightful acidity, and its flesh quite tender. The latter, equally tender in its flesh, was so mild and sweet as to make one at once reject it. It is equally mild and sweet when eaten uncooked, having, in fact, no flavour; yet large specimens of this kind of Apple are imported and bought by "a discerning public," at 2s. 6d. each, and this reminds me of imported Newtown Pippins, which are often sold at a high price, yet are perfectly insipid. The last hot summer suited this Apple marvellously well, the fruit from trees grafted on English Paradise stocks being remarkably clean and bright, as they were in 1865. No Apple keeps longer sound in spring, it is always mild and sweetish, not bad but never good—that is, never with any aroma; yet this sort has been praised to the skies by the importers. It is just possible that in America, when freshly gathered, it may be quite worthy of all that has been said about it there, but its goodness seems to evaporate on the voyage. I have just tasted a fine yellow fruit of this sort, and also one of the White Calville. The flesh of both is tender and juicy, but comparatively flat, lacking the briskness of the Nonpareil race, and also that of our Pitmaaston Russets, and the English Apples.—T. R.

—THE FORTUNÉE PEAR.—I send you a specimen of this Pear, which is remarkable for its long keeping, and, when quite ripe, its agreeable briskness of flavour. It was raised in Belgium early in the present century, by Mr. Parmentier, then well-known by pomologists. He thought it a most fortunate gain, hence its name. Like many late Pears, it is much influenced

by site and soil. Here it rarely ripens, but in the garden of my son at Harlow, the tree budded on the Quince stock and trained against a south wall, it never fails to ripen and prove of excellent quality, generally keeping sound till April. The soil is a light garden mould resting on gravel.—T. R.

MR. JAMES BACKHOUSE.—Died on the 20th inst., at his residence, Holdgate House, near York, in the 75th year of his age, James Backhouse, senior partner of the firm of James Backhouse and Son, nurserymen and seedsmen, York. This is the bald announcement we have received of the death of Mr. James Backhouse, who, during a long life, stood high as one of the leading nurserymen of this country. It was not, however, through his connection with trade only that Mr. Backhouse was known. As a philanthropist and as a Christian gentleman his name will long be remembered, not only in the Society of which he was a prominent member, but wherever the deeds of good and benevolent men are recorded. We hope to be able soon to give a more detailed sketch of this excellent man.

WORK FOR THE WEEK.

FRUIT AND KITCHEN GARDEN.

As the season has proved so mild it will be difficult to wheel manure over the ground where necessary, and few operations injure soils for gardening purposes more than wheeling in moist weather. As soon as the ground is fit, therefore, let this work for all spring crops be forwarded as much as possible. Where dung will have to lie on the surface till March, it should be soiled over immediately, or drying winds will steal away its properties. As soon as the blossom buds of Apricots can be distinguished, the trees should be pruned and nailing completed. The eggs of the caterpillar which so much infests them in the leaf should be hunted for and destroyed; they are deposited on the branches in circular groups of about the size of a Parsnip seed, and look somewhat like one pasted on. The trees must have protection forthwith. Take care to secure bundles of the main twigs of Apple prunings, give them a tie at each end, and throw them in some dry place. They are very useful during the summer. Let Peaches and Nectarines be pruned and nailed. As soon as nailed well wash the trees and walls with soapuds, and when dry take a bowl of sulphur mixture—viz., sulphur blended with soft-soap water until as thick as paint or nearly so, and draw a strip with the brush between every two shoots. This is a good preventive of red spider. Watch Gooseberry buds. Country people in some places tie feathers over the bushes to keep birds away. Spring Broccoli now coming on, such as Grange's or Knight's, should be protected. Push a handful of soft hay amongst the leaves. Plant out August-sown Onions for early bulbs. Try to fit up a few warm slopes with hoop-and-mat coverings to receive early Potatoes, &c. Hoe and clean all winter Spinach and other standing crops. Put down scrapers where necessary, and top-dress alleys or back walks with spare cinder ashes, which make excellent and dry walks. Cucumbers, look to your early frame; if the dung is sufficiently worked build the bed forthwith. Place brushwood a foot deep at bottom, and introduce more about three-parts of the way upwards, if you can; it will facilitate the action of the back and front linings. Use well-wrought dung for the outsides of the bed, and fill up the interior with older and weaker material, such as half-spent leaves, &c.

FLOWER GARDEN.

Grass lawns will now be benefited by a thorough rolling, as will also gravel walks. Examine all belts, remove deciduous trees where they injure the best evergreens, and plant Hollies or trees of a perennial character in the blanks. If not already done, stake newly-planted trees carefully, the harm resulting from not staking is in some places very great this season. Procure Rose stocks, and plant them in lines on highly manured ground in the kitchen or reserve garden. Owing to the mild weather we have hitherto had, most out-door plants will be more susceptible than usual of frosts and cutting winds. Many collections of Tulips are now so forward that unless protected in some way serious consequences may result to the embryo blooms. Rannunculus beds may be thrown up in ridges of about 4 inches high, leaving the lower part of the bed undisturbed; advantage can then be taken of a fine day for planting should the weather prove fickle about the 14th of February, as when suffered to lie in this state the surface soil becomes sooner dry, and by simply raking level is immediately ready for the roots.

GREENHOUSE AND CONSERVATORY.

The expediency of night coverings for the roofs of glass houses has been frequently pointed out and generally admitted. It is very economical as regards the amount of fuel, more especially in old houses with badly-fitting glass. Under such circumstances a trial is only required to prove its utility. Maintain a mild agreeable atmosphere in show houses, and see that all plants are clean and in good health. If any become infested with insects remove them immediately, for no course of culture will succeed without thorough cleanliness. *Cinerarias*, which are cramped in their pots, should have a shift, as well as Chinese *Primroses* for spring-flowering. Introduce into the conservatory forcing-pit bulbs, *Roses*, *Pinks*, *Lilacs*, and plants of that description in succession. Let every attention be paid to providing a succession of bloom with which to keep this house gay, and avoid as far as possible using much firing, which is expensive, and is very injurious to most plants. Be careful not to let plants in bloom suffer from the want of water, giving weak clear manure water to *Camellias*, *Salvias*, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. In greenhouses damp and mildew are the great enemies to be guarded against, and these must be sharply looked after, especially in the case of plants that have not ripened their growth and are in a rather soft state. If the former is troublesome it must be remedied by free ventilation in mild days, using a little fire heat at the same time; of mildew, a dry well-ventilated atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required here at present, but the plants should be carefully looked over about twice a-week, so as to make sure that nothing is allowed to suffer from the want of it. If not already done let all plants be tied with the least possible delay, for it is difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this description of work is done the better specimens will look when in bloom later in the season.

STOVE.

Begin to repot *Orchids*, taking them exactly in the order in which they bud. Be sure that your material is scalded or half-charred, to destroy insects. Keep the plants well elevated, and use plenty of charcoal in lumps of considerable size, fastening the whole at last so that the plant cannot be loosened by agitation. *Sphagnum* or other moss pegged on the top makes a good finish, and is to be recommended in houses which are unavoidably deficient in atmospheric moisture. Syringe plants on blocks occasionally. Select some of the best young plants of *Euphorbia*, *Rondeletia*, *Brunfelsia*, *Jatropha pandurefolia*, &c., and place them on bottom heat. Cut back *Poinsettia pulcherrima*, *Eranthemum bicolor*, *E. pulchellum*, and *Justicia coccinea*. Shake out and repot in good open fibrous loam, half decayed, with some sand, the tubers of *Gloriosa superba*, and place them on bottom heat. No water should be applied to the tubers until they have commenced their growth. This is a very beautiful and very curious plant when well cultivated. Let the temperature be 60° by night, and 65° by day, rising to 70° on sunny afternoons.

PITS AND FRAMES.

Provide a quantity of turfy loam, fibrous heath soil, corks of various sizes, sand, rubble, and pieces of charcoal, and see that every empty flower pot is well-washed, dried and in readiness, flower stakes of all sizes neatly made and painted, and everything ready to begin operations in the potting-shed.—
W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

A RATHER sharp frost on Friday night and frost all day on Saturday, with a clouded sky and a stationary barometer, lead us to think we may have cold at last, and perhaps ice by the beginning of the week, say on the 25th and 26th. If this month pass without enough of frost for ice, there is less chance of a good supply afterwards, though several times we have collected a good quantity in the beginning of March. We presume in the north there has been no lack of this great essential in many families; but within thirty miles of London we have as yet had none worth going after. As now and then we may have a season without ice, it is always important to have a house large enough to tide over the most of two years in an emergency, as, though huge blocks of ice can be had from abroad, and cheap enough at first, the long carriage by rail and

cart make it expensive in the end. These blocks, if surrounded by woollen cloth and sawdust, will keep a long time without melting.

Expecting frost, therefore, the chief work in the kitchen garden has been protecting, such as packing round *Globe Artichokes* with litter; placing small mounds of burnt earth and ashes over the crowns of *Sea-kale*, which also so far protect them from the nibbling of mice, rats, and rabbits; scattering litter lightly over *Celery* beds, *Endive*, *Lettuce*, &c.; laying laurel boughs over *Lettuces* at the bases of walls; and placing laurel branches over good beds of *Coleworts*, which the mild weather had made tender. Put some litter over hand-lights with *Cauliflowers* under them, and protected in the same way those under old sashes and still yielding their produce. As a matter of precaution, and having no wish to use the pick if it could be avoided, took up some *Horsradish*, *Jerusalem Artichokes*, *Sea-kale*, and *Rhubarb* roots, to be kept covered up in a shed until wanted. Took up also the last of the *Parsnips*, fine fresh roots, to enable us to trench the ground. *Parsnips*, we think, are most pleasant for food when taken fresh out of the ground, as when kept some time, though fresh and good, their saccharine properties are increased by the gradual loss of moisture. Vermin, moreover, had begun to operate on the crowns, as they did rather too freely on our *Beetroot* before it was housed.

Planted some frames with *Potatoes* that had been started several inches in the Mushroom house, and find that we must look after rats that have already found their way to them. The slight hotbed of leaves has, no doubt, encouraged the rats to nestle in the warmth. They seldom condescend to eat the *Potato*, except when crisp and young; but they would soon make a bed like a ploughed field if let alone for a short time. On a similar slight hotbed sowed *Horn Carrots* in rows, and *Radishes* between the rows. This we find better than sowing both broadcast. If the *Carrots* are 8 or 10 inches apart, row from row, they may stand thickly in the row and be thinned in drawing, and the drawing of the *Radishes* will give them room.

Mushrooms.—When a regular supply is wanted it is well to have a bed in a close, shut-up house, heated or unheated; but, as stated by a correspondent, they may be had in open sheds or in the open air all the winter, only the more the place is exposed the more care will there be needed in covering, so that the bed shall neither be too cold nor too hot. A heavy covering, if it become damp in foggy weather, would so heat as to injure what would otherwise have been a good bed. An open shed protected from rain will, therefore, be better than the open air. From one bed in the shed we still have frequent gatherings, and every fresh piece we make in the Mushroom house helps to keep it warm with but little other artificial heat. Though we have had rather large beds, ridged like a span roof, that bore for long periods, yet for constant supply we prefer shallow beds frequently made. We have put in another piece in the Mushroom house, using up all the shortish dung that we had collected for some time in an open shed.

A correspondent tells us that his bed shows plentifully, but the *Mushrooms* seem to have no more substance than wafers, and wants to know how to grow them fleshy. Perhaps the atmosphere of the place is too hot and too dry. Most likely the bed, below the soil, is too dry. In the first place, reduce the temperature, and syringe the walls and paths if in a house. In the second place, make small holes all over the bed, and water with dung water at 80° or 90°, made from sheep dung, deer dung, cow dung, or horse dung, that has been dried a little before being put into very hot water, allowing the water to cool down to the above temperature. A peck of such half-dried manure would do for eight gallons, or two garden-potsful of water. The best way to secure fleshy *Mushrooms* is not to have the manure too dry, and after spawning and finding the heat suitable, to plaster the surface over with half an inch of cow dung that has been kept in a heap for a month or two, and let that dry a little before adding the soil. We gave up that custom, which we once practised largely, because we had so many complaints that the *Mushrooms* would not cook, the hearts remaining raw when the outsides were done. Fleshyness may thus be overdone.

Cucumbers.—Having borne too freely about and before Christmas, just as we expected a part of those in the pit began to look badly, and we had them removed. The very dull weather was most unfavourable to them in a pit—much more so than it would have been where a steeper roof would have caught what little sun there was. A part will yet do some service, and plants have been potted-off to take the place ere long of those

removed. Potted also some seedling Cucumbers under a frame, with a bed formed of fresh dung and a layer of tree leaves. We find young Cucumber and Melon plants do best at an early stage in such manure heat.

Kidney Beans.—Top-dressed those coming in with old Mushroom-bed dung, &c., and sowed for succession. The difficulty now is to find a foot of spare room under glass, and to obtain a little space we must often change and move plants—a very desirable practice but for the time and labour it takes.

FRUIT GARDEN.

Proceeded with pruning as we could find an opportunity. Had the orchard-house walls whitewashed with limewash, the white glare taken off with some blue-blackening, and some cement added to the whitewash. When cement is added, the wall should be damp when the wash is applied. This will be the case if the wall be well washed down previously. The trees, washing, tying, &c., must be left for a wet or stormy day, and also the fresh-surfacing of the soil in the case of trees in pots. We shall fix a rim of turf 3 inches or more above the pot; and this season we shall use for the purpose thin turf, doubled so as to have the grassy part in the centre, which therefore will give little trouble, as the ridge of the double part will form the new rim.

Strawberries set first on the top of a mild hotbed in a frame, not plunged, are now showing bloom strongly in a pit where fire heat can be given. From the same beds two rows of Strawberry plants have been placed in the Peach house, now started, the bottom still filled thickly with bedding plants. The frames were again filled with Strawberry pots, to be gently excited in the same way. Beginners will notice what we said previously about not plunging such pots in a bed. We think we thus gain in time when we do not take the plants to a forcing house at once. As a rule, we have never been able to treat the forced Strawberry otherwise than as a subsidiary crop; but though good results are thus obtained, we would advise all who wish everything to have justice, and to see everything in the right place, to have a regular Strawberry house, such as designed by Mr. Ingram, or lately if not now at work at Enville. The Strawberry will never have its rich flavour if the plants be shaded or crowded beneath other things. In the frosty mornings wheeled rotten manure to go between the rows of Strawberries out of doors, and also to mulch the surface near dwarf fruit trees. Both for them and Strawberries we have great faith in this surface-dressing. In fact, from the time of planting the Strawberry in moderately stirred and enriched soil, we never wish to see the soil in which it grows stirred, even with a fork, above an inch or so in depth until the plants themselves are dug down.

ORNAMENTAL DEPARTMENT.

The out-door work was chiefly a continuation of that previously described—pruning, turfing, levelling, and in the frosty mornings wheeling, and especially making mounds of fresh soil where some of the Pine tribe are to be planted as specimens. Except a few that prefer the fen and semi-morass, the great bulk of this tribe decidedly prefer being planted on a mound, and this, no doubt, because most of them flourish naturally on hilly and mountain slopes, where, at least, the roots near the collar will never encounter stagnant water. Kept on pruning and nearly cutting down large Laurels, not because it was the best time to do it, but because there was a better opportunity for doing it than in the spring. This cutting-in rather freely is almost essential in many places if a healthy vigorous appearance is to be presented, as if left alone for many years the heads become thin and scrubby-looking, and can only be kept in healthy luxuriance by a rather free use of the bill, the knife, and the saw. Daubed all the large cuts with dark paint to keep wet out, and this will prevent nearly all danger. In general they break freely enough in spring. Cut-in also some Ivy fences and arches freely on the same principle. They will be green enough in summer.

Pruned Roses, &c., against a wall for the summer season, having more time now, and the Roses and shrubs had been left rather rough, and the wall wanted a thorough cleaning. To keep the plants secure, a little litter was fastened over the soil near the stems, and some laurel boughs fastened against the Roses, &c., which we have generally found sufficient even for the more tender of the Tea kinds.

Until the 24th, Scarlet Pelargoniums, *Cassia corymbosa*, *Salvias*, &c., had stood in a corridor, fronted with glass, roofed with zinc, and unheated. We cleared this all out, as some of the plants were too large to lose, and removed several of the best to one end, lofty, and with a glass roof, as well as glass in front

abutting against the mansion. Here at one end we had placed a small iron stove, the inside lined as far as the fireplace with thin firebrick, and have no doubt it will enable us to keep the place safe, though we now see that a larger stove would be better. It is not what a stove may do that ought to be the question, but what it will do with the greatest ease and security for the plants, with the lowest effectual heat in the stove. An extra row of pipes in a house used for hot water, will often make all the difference between the easy healthy, and uneasy unhealthy heating of a house. To secure healthy heating from hot water, the water should not be within some 30° or 40° of the boiling point. On the same principle, 10s., 20s., or 30s. more for a larger stove would often be a great economy in attendance and consumption of fuel, and a milder heat over a larger-surfaced stove, would be more healthy than a greater heat over a smaller surface. In this place set a number of Hyacinths and Crocuses opening their blooms, in boxes and vases, and even edged some boxes with Snowdrops taken from a warm sheltered place out of doors. We feel sure that Camellias and Oranges, Pelargoniums, Epacris, and Cinerarias will be secure for the winter. We hope the whole place will some day have a couple of hot-water pipes, but then the stove will be anything but lost. We would have no objection to having two or three of them in our stores.

Fresh-regulated conservatory. The clearing away a few lights of Cucumbers enabled us to make a hotbed for cuttings, bulbs, and fresh-potted plants; and potting, clearing, watering, and looking after Roses and shrubs in heat formed the chief work in this department, along with taking plenty of soil under cover and putting it in warm places.—R. F.

TRADE CATALOGUES RECEIVED.

Hooper & Co., Central Avenue, Covent Garden Market, London, W.C.—*General Catalogue for 1869.*

Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Descriptive Spring Catalogue of Flower and Kitchen Garden Seeds. With Appendix.*

COVENT GARDEN MARKET.—JANUARY 27.

We have an excellent assortment of vegetables for the season, including Green Peas, Artichokes, and new Potatoes from Algiers; also Asparagus and Lettuces from Paris, three days a-week. The supply of fruit is ample for the trade, and of Grapes especially; these consisting of Hauburghs, Alicante, Lady Downe's, and Gros Guillaume.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	to	2	0				
Apricots doz.	0	0	0	0	Melons each	2	0	to	5
Cherries lb.	0	0	0	0	Nectarines doz.	0	0	0	0
Chestnuts bush.	10	0	16	0	Oranges 100	2	0	6	0
Currents ½ sieve	0	0	0	0	Peaches doz.	0	0	0	0
Black doz.	0	0	0	0	Pears (dessert) doz.	2	6	6	0
Figs doz.	0	0	0	0	Pine Apples lb.	4	0	6	0
Filberts lb.	0	9	1	0	Plums ½ sieve	0	0	0	0
Cobs lb.	1	0	1	6	Quinces doz.	0	9	1	6
Gooseberries quart	0	0	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse. lb.	6	0	8	0	Strawberries lb.	0	0	0	0
Lemons 100	4	0	8	0	Walnuts bush.	10	0	16	0
					do. 100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes doz.	3	0	to	6	0	Leeks bunch	0	4	to	6	0
Asparagus 100	5	0	8	0	Lettuce score	2	0	4	0	0	
Beans, Kidney .. lb.	2	0	3	0	Mushrooms pottle	2	0	0	0	0	
Beet, Red doz.	2	0	3	0	Must.d. & Cress, punnet	0	2	0	3	0	
Broccoli bundle	1	0	2	0	Onions bushel	5	0	7	0	0	
Brus. Sprouts ½ sieve	2	0	0	0	Parsley sieve	3	0	4	0	0	
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0	0	
Capsicums 100	0	0	0	0	Peas quart	0	0	0	0	0	
Carrots bunch	0	4	0	8	Potatoes bushel	4	6	6	0	0	
Cauliflower doz.	3	0	6	0	Kidney do.	4	0	7	0	0	
Celery bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0	0	
Cucumbers each	1	0	2	0	Rhubarb bundle	0	9	1	6	0	
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0	0	
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	0	0	
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0	0	
Herbs bunch	0	3	0	0	Tomatoes doz.	1	0	2	0	0	
Horseradish bundle	3	0	5	0	Turlops bunch	0	6	0	0	0	

TO CORRESPONDENTS.

ADDRESS (*Definite*).—We cannot state the address of any of our correspondents.

PELARGONIUM (*A. E.*).—The white leaves, probably, will not be permanent, and the plant short-lived. It is impossible to form an opinion about it from seeing a single leaf.

MUSHROOM SPAWN (*T. L.*).—It may be obtained of any of the leading seedsmen who advertise in this Journal.

DECAYED DAMSON TREE (*Spalding*).—The interior of the trunk being decayed, is quite sufficient explanation of the hole you describe. Decay spreads from the centre to the exterior, the decayed part harbours insects, and the small insect-eating birds resorting thither soon make a cavity.

horizontal, or nearly horizontal pipe from the stove before it goes upright. Now, all our correspondent would have to do is simply this—fix on a place, say about the middle of the house, for his stove, have an elbow-piece of plate iron to fit on the stove, say 1 foot horizontal and 1 foot perpendicular. Opposite the last, in the roof, take out a square of glass, and put in a square of iron or zinc, with a hole in the middle to let a pipe go into that perpendicular part of the elbow and beyond the roof for about 18 inches, and on that end in the open air place a cowl, which is generally connected with a foot or so of piping. It must be remembered that the draught and the consumption of fuel will be in proportion to the air admitted, and just in proportion to that air admitted by the asphalt ventilator will be the escape of the heat through the pipe into the open air. Whenever the stove is hot enough, the great object then is to keep heat in the stove without sending much up the pipe, by just leaving enough of an opening to keep up a slow combustion. It is thus very easy to have the stove quite warm, and the pipe 4 or 5 feet from the stove very little heated. Coke should be used.

HEATING A GREENHOUSE (A Beginner).—Such a hipped-roofed house as yours should be arranged according to what is wanted from it. One enabling you to have bottom heat without dung might have a wall 5 feet high, and 3½ feet high outside measure from the front wall. This would enable you to have a chamber with two pipes beneath, the top of the chamber being 18 or 20 inches from the floor; or you may have brickbats and clinkers round the pipes, and then fine gravel and sand, or ashes, to plunge in. See an article in page 283 of our last volume on failures in obtaining bottom heat. Then the back part of your house we would, after the pathway, devote to a sloping stage, or a level sparred table, or even another pit. If you contemplate growing large Vines in pots, and good-sized Tangierine Orange trees, we would have a 5-foot-wide pit at the back, and a sparred platform in front. You would need two pipes for the bed, and three for the atmosphere of the house. The Egg-plant will do well if you keep it clean and free from insects. It does best raised in heat.

PRUNING VINES (J. Fielding).—We would cut-in each of the inside branches to one or two buds, and the main leader to rather more than a third of its length from the bottom, and on that leader leave nothing but the main buds. Though this main shoot or leader be strong, the above plan will be more profitable in future than leaving too much length now.

PROPAGATING BED (Idem).—As to your wooden tank for bottom heat, 4½ feet wide, 7 inches deep, with two pipes passing through it, we would say, first, that it is often a disadvantage to have to heat a tank 7 inches deep. We would prefer the water to be not more than 4½ inches deep, and the slates 1 inch or so above the water. If your propagating pots go near the heating medium as respects their bottom, it matters little what you plunge in—sand, fine ashes, tan, cocoa-nut refuse, &c.; but whatever you use, if there be much between the slates and the pots, and that become dry, it will act less or more as a nonconductor of heat upwards. A very good bottom heat would be from 75° to 85°, and a top heat of from 60° to 70°. The bottom heat in such a bed is best secured by having over the bed small boxes with glass on the top, and then the atmosphere of the house in general may be much cooler. The two pipes in the tank will not be enough for the 9-foot-wide house, unless your propagating is confined to the late spring months, and even then you would require to have upright pipes, one end resting on the slate to let heat into the atmosphere of the house. You may, however, have separate pipes for top heat, and then this would not be necessary. See an article at page 283 of our last volume.

POINSETTIA PULCHERRIMA PROPAGATION (Eastbourne).—It is propagated from cuttings and eyes, which should now be inserted in pots three-fourths filled with sandy peat and a little loam, and then to the rim with silver sand. Two joints will be sufficient for a cutting, and insert it in the pot so that the upper eye only will be clear of the sand. The eyes may be struck like those of Vines. The cuttings as well as the eyes should be taken from the ripened wood, and the pot should be plunged in a hobbed of 75°, and be covered with a bell-glass. Do you mean Hedychium?

GRAFTING QUINCE STOCKS (T. B.).—It is much too early to graft. The stocks, from the unusual mildness of the winter, may be growing, but it is likely we shall yet have a period of cold weather, when the grafts would not, presuming them to be placed now, take kindly, and would probably perish. The grafting would be better deferred until the middle of March, and the scions will take all the better of the stocks being slightly advanced in growth.

PEAS EATEN BY BIRDS (A Constant Reader).—You may safely dust the plants with slaked lime, which will not injure the plants you name in the least, nor the Peas, but will keep off slugs and other predatory vermin. It should be sprinkled over the leaves of the plants whilst they are wet, and should be repeated as often as it is washed off.

CINERARIAS BLIND (A Constant Reader).—The Cinerarias, we think, are not as you suppose blind, but will yet flower. The chief cause of blindness is excessive leaf-formation, caused by too liberal potting and too rich soil. For early flowering the plants should be kept in comparatively small pots, as they flower best when the pots are filled with roots. The plants intended for late bloom will no doubt flower well, at least they will be more certain to do so than those now in a blooming state.

PLUM TREES WANTING SIDE BRANCHES (J. M.).—From the sketch we conclude your trees are horizontal-trained, which is the worst possible form for the Plum. We think your only means of filling the vacant space will be training a shoot from the base of the branch next below the vacant space. If a shoot come directly from the stem by all means encourage it. The deficiency of side branches is the result of neglecting to head or shorten the leading shoot.

PROTECTING PLUM TREES FROM FROST (Old Subscriber, Devon).—We think your mode of protection would answer well, but it must be so contrived as to be capable of removal in days which are not frosty. Tiffany is the most suitable of the materials you name. The framework made of slaters' laths and covered with tiffany will be excellent for the protection of the trees against the walls, putting it on when frosts occur, and removing it by day, unless frost prevails. For the pyramid trees we would recommend slaters' laths fixed round them firmly in the ground, and of such a length that they will be higher than the trees. Secure the laths at the tops with tarred string, drawing them rather closely together, but not so as to press on the branches; and over this framework we would have tiffany covers made so as to enclose each tree, and sowed together, so as to be easily put on at night and taken off by day. This mode of protection would not be one-half so costly as forming a sort of tiffany house as shown in your sketch. To such, however, we have no objection, except that, so far as we can perceive, it would have to remain all the time the trees are in flower, and until danger from frost be past. Tarred netting, unless it have very small meshes—say half an inch—will not be sufficient protection, though it is better than none.

OLD PLANTS OF SCARLET RUNNERS (A Constant Reader).—Your Scarlet Runners of last year will not be of any use for this year, as they were left in the ground; but if they had been taken up and the roots preserved in sand in a place from which frost was excluded, they would probably, if planted early in May, have yielded a good crop. Preserved in this way, however, they are not equal in continuance of bearing to plants from seed, though they afford an earlier crop.

CUTTING DOWN PASSION-FLOWERS (Amateur).—The leggy Passion-Flower may be cut down to the bare stem, and to the height you require, and it will push from the part below; at least, we have cut down several plants, and they always pushed new shoots freely.

GRAFTING BROOMS (Idem).—We think what you take for a Spartium or Broom, is one of the Cytisuses, for none of the Brooms that we know is propagated by grafting, and we do not think them likely to be so dwarfed by grafting as to give such a close head as you describe. The Cytisuses are closely allied to the Spartiums or Brooms. The best stock is the Laburnum; put the graft on the side of the stem, and not on the side branches, at the height required. This grafting is best done when the stock is beginning to grow, and before the buds have burst.

WHEAT-DESTROYING INSECTS (L. R.).—You have sent us two different kinds of insects, which are stated to have recently eaten off a large part of a field of Wheat. One is the black caterpillar of one of the middle-sized Rose Beetles (*Staphylinus* sp.), which are generally regarded as feeding upon other insects. The other is the grey caterpillar of one of the surface moths, most probably *Noctua didyma*, the common Rustic Moth. The latter are only half-grown, and unless checked will continue to do injury to the remaining portion of the crop. A careful examination of the plants should be made, and those which are drooping from a recent attack of the caterpillars should be pulled up, and the caterpillars (which will be found about the roots), carefully destroyed. We know no other remedy in the present state of the insect. Doubtless the long, dry, hot summer of last year enabled the female moths of this and other injurious species to deposit their eggs in great profusion, and more than ordinary vigilance will be required in the ensuing spring.—W.

NAMES OF PLANTS (C. C.).—1, *Selaginella Krassiana* (S. hortensis of gardens); 2, *Pteris serrulata*; 3, *Davallia pyxidata*; 4, *Adiantum cuneatum* (D. S.); *Doodia candra*. (W. Smith, Oaken).—A, *Pteris cretica alpinolenta*; B, *Polypodium phymatodes*; C, *Adiantum formosum*; D, *Platyloma lutea*. (J. Bryen).—*Valloia purpurea*. The three genera you name are chiefly distinguished by characters based on the insertion of the stamens, the length of the perianth-tube, the regularity of the perianth segments, &c. *Valloia* and *Hippeastrum* have both been separated by such characters from the genus *Amaryllis*, in which they were formerly included. (J. Luck).—*Athyrium Filix-femina* var.; *Adiantum ethiopicum*. (W. B.).—1, *Hypnum proliferum*; 2, *H. rutabulum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the fortnight ending January 26th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 13	29.957	29.879	41	34	45	44	E.	.09	Densely overcast; fine; overcast at night.
Thurs.. 14	29.891	29.579	49	34	44	44	S.E.	.08	Densely overcast; fine, slightly overcast; densely overcast.
Fri.... 15	29.872	29.529	53	33	43	44	S.W.	.08	Overcast, slight rain; showery; fine, but cloudy.
Sat.... 16	30.128	30.054	50	35	46	44	S.W.	.08	Fine, cloudy; rain; fine, but overcast.
Sun.... 17	30.155	30.039	52	31	45	45	S.	.00	Rain; showery; clear and fine at night
Mon.... 18	30.307	30.231	43	34	45	44	W.	.00	Foggy; dense fog throughout.
Tues... 19	30.400	30.588	42	21	45	44	S.E.	.00	Overcast, fine; densely overcast; clear and frosty.
Wed... 20	30.511	30.197	44	25	42	43	S.E.	.00	Sharp frost; very fine; clear and frosty.
Thurs.. 21	30.124	30.064	33	24	41	42	N.W.	.00	Frosty; fine, overcast; dense fog.
Fri.... 22	30.247	30.224	40	26	41	41	S.E.	.00	Fine and frosty; overcast, fine; densely overcast.
Sat.... 23	30.145	29.976	32	24	40	41	S.E.	.00	Densely overcast, fine; overcast and cold; cloudy.
Sun.... 24	30.045	30.045	35	16	39	41	S.E.	.00	Frosty; very fine; clear and very frosty.
Mon.... 25	29.937	29.850	42	33	38	39	S.	.00	Sharp frost; very fine and clear; overcast.
Tues... 26	29.783	29.745	47	25	39	39	S.W.	.00	Overcast; fine, slightly overcast; cloudy, but fine.
Mean	31.691	29.991	43.53	28.50	42.73	42.43	—	0.24	

POULTRY, BEE, AND PIGEON CHRONICLE.

VARIETIES OF GAME AND OTHER FOWLS.

I THANK "H. E. W." for his comments on Game fowls (see pages 467-469), and think most admirers of poultry will admit that there is great sameness and lack of variety at shows. I trust that the hint may have some attention from committees and secretaries of poultry shows. I have often thought how interesting it would be to see all the varieties of Game fowls, and no doubt the public would greatly appreciate such a collection if it could be brought together.

I some years since kept a beautiful strain of Black Reds, which had top-knots, yellow legs, and the most gaudy plumage. Birds of this variety were always plucky for the pit, and won many a battle; they generally weighed from 4 to 4½ lbs., and were always admired on account of their beautiful style and courage. Another and much heavier variety was much sought after for the pit in the north of England. I have known birds of this variety weigh as much as 8 lbs. They always gained the ascendancy of birds of the other sort owing to their weight and strength, especially the hens, for these had spurs. In colour these Game fowls were Black Reds with yellow legs, and were spangled or spotted with white regularly all over; the cock's breast the same. I never thought this breed so handsome as the former, but it was quite as good for the pit.

I think if committees would give more prizes for "Any other variety of Game" these strains would soon make their appearance, and form quite a new feature at shows. I do not advise giving large prizes at first, but to afford a little encouragement to such an amount for each extra variety as would save its entry money.

I will now notice the "Any other variety" class of fowls, which is very interesting from containing anything new. Look back a few years, and see what a number of additional varieties have gained attention, and caused many to keep fowls. My object is to encourage collection as much as selection, and to bring into notice both new and old varieties. How seldom do we see the Rumpless fowl, also Frizzled and Silky fowls, as well as the much-abused but the noble, fine, and good Malays, which are worthy of more attention. I have found them good hardy birds, which will eat almost anything; they bear confinement well, are good mothers, and not such bad layers as some writers say, though making plenty of noise in laying, which is not at all times agreeable. They are good table fowls when young, but rather leggy. There is likewise this to recommend the Malay—viz., that it is a distinct race of poultry, and these fowls are peculiar, so different in their walk from other kinds, that they always receive a share of attention at poultry shows. I am almost afraid this variety will be lost, unless the committee give more prizes in the "Any other variety" class; and I believe Birmingham is the only show that has a class for Malays, and this I hope to see continued.

I trust more attention will be given to extra stock not named in schedules, and then I am sure many beautiful and curious varieties will be brought into notice, and fanciers will have opportunities of examining what they now seldom see.—R. H. D.

GAME FOWLS.

THE Black-breasted Birchin Duckwings with yellow legs are well worthy of notice, and the hens are very attractive-looking. This cross has been obtained from the Wheat-coloured, or what in some parts of Lancashire are termed the Straw-coloured, Black-breasted Reds, a race of birds which is very "game," breeds true to colour, and might with credit find a place at our exhibitions. I remember having had some a few years ago, the cock birds being wonderfully good in colour; the breast, thighs, and vent were particularly free from red or light-coloured feathers. They are best kept to their respective colours; when crossed with the Partridge-feathered birds, the pullets will invariably take after both kinds, thus spoiling the beautiful markings of the Partridge kind. Some judges and exhibitors are partial to a high-coloured breast in the Grey Duckwing hen. This, I think, is a mistake, as it evidently displays a strong recurrence to previous crosses with the Black-breasted Red. The paler-breasted hens are more closely allied to the true Duckwing, are of better colour, and of a more silvery hue on the back and thighs. The Partridge-coloured Black-breasted Red hen should have a clean brick-coloured breast, and be the same to the vent, as described by some of the old writers upon Game

fowls. I also like to see the thighs of a ruddy appearance, and not of that ashy tint we so often see.

Pilea will never, perhaps, take a leading position as exhibition birds, although they are a beautiful fowl when bred with care. Some breeders object to them from a want of success in keeping them up to the desired excellence, perhaps requiring more care and perseverance than they can well devote to them; indeed, if not carefully crossed they are soon apt to run long and loose-feathered, and fall off in colour and other requisites. In the hands of an experienced and ardent fancier they can be brought to be both handsome and attractive. I visited a yard a week or two ago where a good number were kept, and amongst them I observed some which were as handsome as any Black-breasted Red I ever saw—the red and white were so well distributed, the bar of the wing so clear and distinct, and not mingled with red; the breast a creamy white, lightly streaked with red; the tail perfectly white; the legs and beak yellow; and short and close-feathered. Some of the Pilea which I have seen recently have been high-coloured birds, but these were well and evenly balanced, neither colour predominating.

I fully hope to see at the exhibitions of 1899 committees offering greater inducements to breeders of both Duckwings and of Pilea than have recently been accorded at some of our leading shows, otherwise these beautiful birds will gradually lose ground until they become things of the past. At the late Manchester Show the first prize for Black Red cockerels was £10, and for Pilea £2, and I think the first prize was £3 for Duckwings.—YORKSHIRE.

BIRMINGHAM POULTRY SHOW.

	1865.	1866.	1867.	1868.
Total Receipts	£984 10s....	£648 3s....	£979 ..	£1,037
Total Admissions.....	41,844	21,511	43,540 ..	44,538

The number of working-class tickets issued at the 1868 show was 19,182, and the sum produced by the sale of them, £479 11s.

The aggregate of the poultry sales, as will be seen from the following return, was not quite so large as in several recent years:

	1865	1866	1867	1868
.....	259	406	313	274
.....	906	1,480	1,103	982
.....	17	10	14	1
.....	6	0	6	0

TRIMMING.

I WAS pleased to see the name of Mr. Hewitt to an article upon the above subject in last week's Journal; but was surprised to find that he does not touch comb-trimming, which must be as bad as plucking out feathers—even worse, because of the punishment inflicted on the bird. I am quite willing to believe that in many of the large shows, the strain on the judges is so great, that time would not permit them to examine the plumage of the birds, to ascertain if they had been trimmed; but to detect a trimmed comb requires no additional time. Any judge as soon as he looks at a Hamburg can tell whether his comb has been trimmed, and that the judges mostly award prizes to Hamburgs with trimmed combs is a fact borne out by most exhibitors. I give the words of one very successful Hamburg exhibitor at our large shows. I bought a Silver-pencilled cock of him lately. When he sent the bird he wished me to give him my candid opinion upon it. In my answer I told him the comb had been most fearfully trimmed, and I hoped the day would soon arrive when that would be of no avail. He acknowledged the trimming, and went on to say, "he is better for exhibition; some judges will have trimmed birds, Mr. — to wit." He further states, "I exhibited a good pen of Golden-spangled Hamburgs at W— Show. I was surprised they were not noticed. I drew the judge's attention to them, and asked if he would kindly tell me their faults. He did so. I afterwards sent them to a larger show trimmed. They competed against the same birds, and were winners. The same judges awarded prizes at both shows." Surely this is not trying to stop trimming. But the unpleasant duty of disqualifying trimmed birds must not be thrown upon the judges entirely. Committees must assist and support them in such a thankless task. I think the regulation suggested by the Editors would meet the case. I should like to see it printed in every schedule, and strictly carried out at every poultry show; then honest exhibitors would have a chance, at present they have but a poor one.—L. WREN, *Lowestoft*.

I, for one, do not trim. I did once, certainly, many years ago, trim a couple of Brahma pullets, and was so disgusted with

myself that I killed them. I did once stand with scissors in my hand, intending to nip off some horns in a Polish cockerel, but am glad to say I resisted that temptation; but legalise all this, and many others as well as I will lose our scruples, and, perhaps, may become great adepts in the art.

"NEMO" in his remarks about Spanish and Game, says, "No one ever objects to a Spanish pen for being trimmed." Well, there is a very fair sprinkling of asterisks in the protest, and I can recollect before our friend "NEMO" joined the fancy a pen of Spanish at one of the large shows, Liverpool, I think, being disqualified on this account, and the disqualification appearing in the prize list. Is it or is it not the fact, that certain strains of Game and Spanish have very few feathers naturally at the base of the comb, and that this is considered a point of beauty? If I am right in this belief, then is it fair that Spanish or Game should be artificially brought up to this natural standard? These are almost the very words I wrote some years ago in reference to Game, in the pages of "our Journal." Then trimming was almost confined to Game. Where are its limits now? I would do away with the dubbing, because I think it leads to the other. I am delighted to find I am not singular, Mr. Radclyffe and Mr. Manning evidently agreeing with me. I confess that I read "Brown Red's" remarks in astonishment. In the first place, he throws out the insinuation that we protest because "we cannot show our birds with this advantage." But I would tell "Brown Red" that "practice makes perfect," and the more one goes on in a path of deception—I use the word advisedly—the easier does the practice become. I do not call simple dubbing a deception, but I object to it, because in a competition the dubbed bird may possibly have an advantage unpossessed by other breeds, as a faulty comb may have been removed. I may misunderstand "Brown Red," but I further read his remarks as meaning that the whole pith of condition lies in dubbing! Now, it strikes me I have seen some Game worse in condition, because they had been dubbed, not, in fact, having recovered the operation, yet taking a silver cup in a very large competition.

One word more to our friend "Brown Red." "NEMO," and those who act with him, are not going to be choked off the trimming grievance by an invitation to tackle the introduction of diseased specimens. We will leave that for "Brown Red," and we will help him. The matter of trimming is far more important at present, and, moreover, seems to be in a fair way to have some decision made—that is what we want.

I turn now to my old friend "E. M. B. A." I had hoped to have gone with him to Bristol, and as I must notice his remarks on this topic, my "free lance" shall at least have the button of courtesy on its point. "E. M. B. A." is inclined "to doubt the wisdom of this new movement," but he goes on to Dorkings, of which breed he is a great admirer, and a not unsuccessful exhibitor, and he comments on the removal of the Dorking spur. He says, "This is an important point in a Dorking cock." But as judging goes now, it is equally important that a Hamburg cock should be even; equally important that a Brahma or Cochon should not be vulture-hocked; equally important that a Polish cock should not have horns; equally important that a Spanish cock's face should be white. I do not see how we are, as I said in my last communication, to draw the line of legitimate trimming; it must be all or none; it must be all legalised, or all abolished. There can be no half measures. Certain points are important in certain breeds, and, of course, these very points in each breed will be the points for fraudulent practices, "fancy tailoring," or whatever other name we may choose to bestow. Were the point unimportant there would be no attempt at alteration; it is the fact that it is the very point on which the judge's verdict will depend that makes the "trimming" exhibitor pay special attention to its getting-up. I recollect well on one occasion sending two pens of Dark Brahmas to a show, where, I candidly say, I expected to take first and second prizes. The judge's verdict was first, and the other nowhere. The first-prize cock was a very good bird, not sufficiently hocked to please me. The unnoticed pen contained a very good cock indeed, and one of the best hens, if not the best, I ever bred, a constant prizetaker, a bird that Mr. Boyle's man wanted continually to purchase. The judge happened to be a friend of mine, and on my remarking to him that I did not admire his judging, that the unnoticed pen was a long way the better of the two, he replied that he personally quite agreed with me, it was much the better, but the birds were rather too hocked for the present fashion, and he passed them over wholly on that account. Here, then, was a case exactly in point. I feel confident that the removal of three, or

at most four feathers from each hock would have made them up to the required fashion. These very feathers were every whit as important in this case as the Dorking spur of the cock referred to by my friend "E. M. B. A." I humbly put it to my old friend, that the logical deduction from his remarks on this said spur is, that all forms of altering the shape of a bird, either by taking off or putting on, are unfair.—Y. B. A. Z.

KENDAL POULTRY SHOW.

THE Committee of the Kendal Show laboured this year under considerable difficulty, as there is not any public building available for the purposes of a very extensive poultry exhibition. With prudent foresight about twenty-eight classes were withdrawn from the schedules of previous years; Pigeons, Geese, and Turkeys being totally struck out. Notwithstanding this drawback, the entries of this year amounted to no less than 462 pens. The difficulty of obtaining a suitable building will soon be obviated altogether, and the temporary occupation of scarcely-completed mills will be a thing of the past; for it is in contemplation to erect a building that will be useful for poultry shows, public concerts, and similar purposes. It would be unjust to complain of the arrangements of the Show in the new Town Hall, just closed, as no one with a prize schedule so purposely contracted could possibly anticipate this year so liberal an entry. Yet such there was, the consequence being, that simply to obtain room all the pens were so restricted in size as to detract most materially from the effect of the Show.

Game fowls were very good throughout, though many specimens of these and the *Game Bantams* were evidently so much overshadowed that, without special care, but little can possibly be expected from them in the coming breeding season. Of *Hamburgs*, the Spangled were undoubtedly the best of the classes, and necessarily these gandy-feathered birds, from the limited size of the pens, showed to the greatest advantage, being far the most conspicuous to the casual observer. *Dorkings* were really excellent, as they generally prove to be in this district, though so far north for the generally-supposed successful exhibition of this breed. The *Cochins* were unusually good, but the pens were far too small for their comfortable accommodation. The same may be said of both the *Spanish* and *Brahmas*. Of the latter variety, we were sorry to see many with diseased legs, an ailment which is highly infectious. The class for "Any other distinct variety," and the Selling classes, were well filled with specimens of good value, and no doubt many pens in these classes would change hands. In domesticated *Ducks*, the Rouens were as classes by far the most numerous, but in a very limited entry of *Aylesburies* the latter proved easily successful for the silver cup. The local classes were exceedingly well filled, and the entry for the plate prize for eggs caused a very large and first-rate competition.

The poultry management was good, but we regret to say that the weather was very unfavourable; still, on the whole, this meeting fulfilled the expectations of its projectors.

GAME (Whites and Piles).—1, C. W. Brierley, Middleton. 2, J. Fletcher Stoneclough. 3, J. Brough, Carlisle. *he*, J. Wilkinson, Lyth; J. Mashiter Ulverston.

GAME (Black-breasted and other Reds).—1, Graham & Robinson, Highgate, Kendal. 2, C. W. Brierley. 3, J. Goldard, Kendal. *he*, W. Boyes, Beverley; E. Akroyd, Bradford; W. J. Cope, Barnsley. *Chickens*.—1 and Cup, C. W. Brierley. 2, J. Brough. 3, J. Hodgson, Whittington. *he*, J. Fisher; T. Burgess, Burnleydam. *c*, W. Boyes; T. Mason, Green Ayre.

GAME (Any other variety).—1, W. Boyes. 2, W. J. Cope. 3, J. Bradley, jun., Kendal. *Hens*.—1, C. W. Brierley. 2 and 3, J. Barrow, jun. *he*, J. R. Robinson, Sunderland; T. West, Eccleston, near St. Helen's; T. S. Radcliff, Bradford; J. Mashiter. *c*, J. Hodgson.

HAMBURGERS (Silver-spangled).—1 and Cup, H. Belden, Goitstock. 2, J. Walker, Knarsborough. 3, J. Fielding, Newchurch. *he*, H. Pickles, jun., Earby, Skipton.

HAMBURGERS (Golden-spangled).—1, H. Belden. 2, H. Pickles, jun. 3, N. Marlor, Denton. *he*, J. Walker, Knarsborough; R. Dickson, Selkirk.

HAMBURGERS (Silver-pencilled).—1, W. Moore, Mann. 2, H. Belden. 3, T. Hanson, Keighley. *c*, H. Smith, Keighley; H. Pickles, jun.

HAMBURGERS (Golden-pencilled).—1, H. Pickles, jun. 2, H. Belden. 3, J. Walker. *he*, W. R. Park, Melrose; D. Broughton, Barnoldswick. *c*, S. Smith, Northowram.

DORKINGS (Coloured, any variety).—1 and Cup, W. Rutledge, Kendal. 2, R. D. Holt, Orrest Head. 3, Miss Malcolm, Munnholm. *Chickens*.—1, W. W. Rutledge. 2, R. Hoadley, Carlisle. 3, D. Gellatly, Meigle. *he*, T. Ulack, Windermere; J. Stout, Kirkby Lonsdale.

COCHIN-CHINA (Cinnamon and Buff).—1 and Cup, J. Mashiter. 2, G. H. Procter, Durham. 3, J. H. Dawes, Birmingham. *he*, G. Calvert, Durham; H. Mapplebeck, Mosley, Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—1, T. Stretch, Ormskirk. 2, E. Tudman, Whitchurch. 3, J. Stephens, Walsall.

COCHIN-CHINA (White).—1 and 2, B. Smalley, Lancaster. 3, S. Ashburner, Dalton-in-Furness. *he*, S. Sherwen, Whitehaven; J. Schollick, Ulverston.

SPANISH (Black).—1 and Cup, H. Belden. 2, T. & E. Comber, Middleton Hall. 3, G. C. Wilson. *he*, S. Robson, Brotherton; Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor; J. Leeming, Broughton. *c*, Bowman & Fearon, Whitehaven.

BRAHMA POOTRAS.—1 and Cup, E. Leech, Rochdale. 2, Mrs. Barrall, Ipewich. 3, Hon. Miss Douglas Pennant. *he*, C. Layland; C. W. Brierley. *c*, R. Smalley.

ANY OTHER DISTINCT VARIETY NOT MENTIONED EXCEPT BANTAMS.—1, H. Belden (Golden Poles). 2, P. Unsworth, Newton-le-Willows (Black Polands). 3, C. Homfray, Caeleon (Houdans). *he*, C. Bower, Bolton-le-

Sands; F. Wilson, Kendal; C. Homfray. c, Lady A. Kenlis, Underley Hall; G. Carter, Bedale.

SELLING CLASS.—1, P. Unsworth (Silver-spangled Polands). 2, T. Hutehinson, Kendal (Golden-spangled Hamburgs). 3, W. R. Park (Crève-Cœur). 4, R. Stinson, Kendal; T. Mason; P. Unsworth; Rev. G. Hustler, Stilliogfleet Vicarage, York; J. Cope, Barnsley. c, Miss Malcolm; Mrs. Taylor, Kendal; J. Gelderd, Kendal; D. Broughdon; J. Stephens.

SINGLE COCKS.—*Game.*—1 and Cup, C. W. Brierley. 2, W. Boyes. 3, J. Beetham. 4, J. Downess. *hc*, J. Barrow, jun.; R. Payne. *Cockerel.*—1, T. Mason. 2, W. Boyes. 3, F. Salter, Crayke. 4, J. Mashiter. *hc*, J. Hodgson, Whittington; J. Turner, Redcliffe. *Game Bantam.*—1 and Cup, J. R. Robinson. 2, W. & H. Buckley, Acreighton. 3, J. Gelderd, Collin Croft, Kendal. 4, G. Maples, jun., Wavertree. c, H. Yonll, Sunderland; J. Crosland, jun., Wakefield; J. Ranthelm, Farleton, Burton.

GAME (Black-bread and other Reds).—1, W. & H. Buckley, Acreighton. 2 and 3, J. Crosland, jun. 4, J. Parlett, Huntingdon. c, W. Dale, Westonsuper-Mare.

GAME BANTAMS (And other variety).—Cup, J. Crossland, jun. 2, T. Sharples, Rawtenstall. 3, Ormrod & Bellingham, Burnley. 4, W. Redhead, Kendal.

BANTAMS (Any other variety, except Game).—1, S. H. Stott, Rochdale. 2, J. & R. Ashton. 3, T. C. Harrison. 4, W. Hodgson, Darlington. *hc*, H. Pickles, jun.; W. R. Park (Japanese); W. J. Cope. c, Toukin & Tuckey, Bristol; J. R. Jessop, Hull; T. Burgess, Brighouse.

Ducks (Aylesbury).—Cup, D. Hardie, Sorbie. 2, T. Soord, Sunderland. 3 and 4, C. Roper, Kirby Lonsdale.

Ducks (Roneo).—1, D. Hardie. 2, R. Rawlinson, Kendal. 3, R. A. Willison, Underbarrow. 4, S. H. Stott. *hc*, W. Taylor, Kendal; J. Hodgson; W. Willison, Kendal. c, A. Smart, Staveley.

Ducks (Any other variety).—1, T. C. Harrison (Mandarins). 2, A. & J. Trickett, Waterfoot (Bahama). 3, S. & R. Ashton (Carolineas). 4, S. Burn, Whithy (Black). *hc*, S. Burn (Mandarins). C. Homfray (Mandarins).

LOCAL CLASSES.

GAME.—*Chickens.*—1, Graham & Robinson. 2, J. Gelderd. 3, G. Hall, Kendal. 4, J. Barrow, jun. *Pullet.*—Silver Plate, E. Wells, Kendal. 2, D. Harrison, Kendal. 3, J. Barrow, jun. *hc*, Graham & Robinson; J. Barrow, jun.; J. Gelderd.

HAMBURGHS (Any variety).—*Chickens.*—1 and 2, — Moore. 3 and 4, T. Smart, Staveley.

SPANISH (Black).—*Chickens.*—Silver Plate and 3, J. Goth, Woodside. 2, J. F. Harrison, Kendal. c, Graham & Robinson, Kendal; G. C. Wilson, Dallam Tower, Kendal.

DORKINGS (Any variety).—*Chickens.*—1, E. Armitage. 2, R. D. Holt. 3, T. Ullock, Windermere. *hc*, Mrs. E. Wilson.

BANTAMS (Any variety).—*Chickens.*—Silver Plate, R. Medcalf, Kendal. 2, W. Cato, Kirby Lonsdale. 3, G. Heywood, Kendal. *hc*, W. Redhead, c, J. Winstill, Cowan Head; G. Hall, Kendal.

Ducks (Any variety).—Silver Plate and 4, J. J. Weller, Kendal. 2, B. Shepherd, Kirby Lonsdale. 3, T. Taylor, Kendal. *hc*, C. Garnett, Kendal.

ANY OTHER VARIETY.—*Chickens.*—Silver Plate, G. Hall, Kendal. 2, A. Fulton, Sedgwick. 3, J. J. Waller, Kendal.

EXTRA STOCK.—c, W. W. Rutledge, Kendal; J. J. Waller, Kendal. Mr. Edward Hewitt, of Sparkbrook, Birmingham, and Mr. R. Teebay, of Fulwood, Preston, were the Judges.

ANTWERP PIGEONS.

How satisfactory it is to have a name at the conclusion of our letters; we know who writes, and whom we address. Surely our "fancies," those advocated in "our Journal," are of such a nature—so worthy of pursuit and of so good a tendency—that writers need not feel ashamed to append their names to their notes. It is pleasant to know those—at all events, the names of those—joined to us by that mystic cord which runs from heart to heart of every real lover of Nature whichever department he may particularly enjoy, or whatever station in life he may occupy. Can "AN AMATEUR" be a lady? the thought has just flashed through my mind. In case my question be answered in the affirmative, I shall insist no further, and say no more of "mystic cords."

But what of Antwerps? I fear "AMATEUR" has mistaken "WILTSHIRE RECTOR'S" remark on this bird in his report of the Glasgow Show. There appears to me no "complaint," but a mere remark that there was "no prize for Antwerps;" and if I recollect rightly, the same writer in a former paper distinctly said Antwerps were possessed of "no points;" and I quite agree with him. We Scotch fanciers may, perhaps, be a little slow in our progress, but certainly we will not admit that we know nothing of the breed of Antwerps. Unfortunately for that bird (and it may also be said, for those who fancy it), we as a body know it to be only cross-bred, and having an instinctive dislike to anything lacking the "genuine ring," we cannot accept the Antwerp as a fancy bird worthy of cultivation. I have now several of this class of birds direct from head-quarters, and have kept them for years; they make excellent nurses for Pouters and Carriers, and give a life to the place where they fly, but except in plumage I see nothing in them. Those who can see the features of the Pigeon—yes, the features, as the eastern shepherds see the features of their sheep—will agree with me that the Antwerp is crossed from so many breeds that the origin of one bird may be widely different from that of another: therefore there can be no points on which to hang judgment. The fanciers in Scotland who fly Pigeons, breed

Tumblers only, and these are second to none. I fear the Antwerp is not likely to make headway in this country. But do not let it be supposed I despise this bird, or the fancy for it. I like the bird, and like to see it; the texture of the plumage is very fine, and the power of wing displayed during its long and protracted flights is to me very interesting.—JAMES HUIE.

DOE RABBIT DEVOURING HER YOUNG.

Does your correspondent, who complains of his doe eating her young, keep her plentifully supplied with water or milk before and after kindling? I have known cases where does have given up this habit on being supplied with clean and fresh water, and never been addicted to it afterwards.—L. B.

THE SCOTCH FANCY CANARY.

MR. BARNESBY SAYS:—"Scotch fancy bird, or Don, the bird of Scotland, and exhibited in many shows in the north of England. Under these circumstances I certainly do not agree with the remarks of Mr. Howarth Ashton, that the Scotch Don is a mongrel." Under what circumstances? The fact of this bird being a favourite in Scotland, and shown at many exhibitions in the north of England, does not disprove the fact that it is a mongrel. It is a mongrel, and any large Scotch fancy breeder will tell you that he crosses it very often with the Belgian to obtain size. Norwich, Lizards, and London Fancies are pure-bred birds. I willingly admit that the Scotch fancy is a great favourite in Scotland, and hope it may be long so there; and when I said the Don was a mongrel, I, of course, meant it was a cross-bred bird, and so it is.—HOWARTH ASHTON.

FOUL BROOD.

OPINIONS AS TO ITS ORIGIN.

In July, 1863, Mr. Woodbury, in an article entitled "A Dwindling Apiary," detailed in the pages of this Journal his first experiences of foul brood. This was followed by two others on the same subject. On the 4th and 18th of August were inserted articles from myself, in which I endeavoured to show how foul brood, according to my experience, might be originated; and in applying the results of that experience to Mr. Woodbury's case and practice as an experimental apiarian, I believed and concluded that the evils of which he complained were brought about by certain doings and manipulations in connection therewith. Hence arose the long and keen controversy which followed betwixt Mr. Woodbury and myself, which drew forth the views and elicited the opinions of not a few of the apiarian contributors to this Journal; but notwithstanding my utmost efforts both by argument and evidence I failed, I confess, to convince my opponents of the soundness of my principles, and, when the controversy closed, I was contented to retire with the consolation only of this maxim, "*Magna est veritas et prevalebit.*"

But what were the views I then entertained? I held that in all artificialising and experimental processes there is the utmost danger to be apprehended unless we carry them out in strict accordance with the natural instincts and habits of the bee; so that in driving or transferring bees, making artificial swarms, transposing or shifting hives, bees, or combs, we must take care that the brood in all stages may not through too long exposure be chilled and die, or, by reason of an inadequate number of bees, may not be allowed to perish by neglect and want of the necessary warmth. I believe if this did occur—if decayed and abortive brood once found a place in any hive—if the numerous larvae and chrysalids became corrupted in their cells, the bees not seeking to remove them if they could, then is laid the foundation of future evils which it is scarcely possible to over-estimate. To such and similar causes I attributed foul brood. I believed it originated by the young larvae and other embryos being in the first instance exposed to chill and neglect, or other adverse extraneous influences, whereby they become abortive and die, and ultimately through the operation of natural laws decay and degenerate into putrescent matter called foul brood.

Such were my views in 1863-64, and although I have not since further obtruded my opinions upon this subject, I have not been an inattentive reader of the copious mass of foul-brood literature, foreign and domestic, which has from time to time appeared in these pages; and in again taking up my pen after an interval of five years, it may not be unreasonable to ask the indulgence of the Editors while I trespass a little upon

their space, in examining some of the opinions advanced since 1863, and in endeavouring to ascertain what progress has been made towards a solution of this great foul-brood mystery.

With the exception of the Scottish author Bonner, very little reference seems to be made to foul brood by any British writer. As a practical bee-keeper of great sagacity and experience Bonner stands deservedly high in general estimation. His observant eye failed not to take notice of the evil effects of decayed brood, which sometimes found a place in thinly inhabited hives, and which he was inclined to ascribe to "cold or some other accident." Any personal acquaintance which Dr. Dunbar had of foul brood must, I think, have been of a trifling nature; and I cannot see, notwithstanding the contrary opinion expressed, that any reference whatever is made to it in his remarks on dysentery in the "Naturalist's Library" in 1852; for he distinctly says, "After long experience and attentive observation, we are satisfied that this insect is subject only to one malady—namely, dysentery." Of Dr. Bevan and Huish I believe their knowledge of it was almost entirely derived from continental authors; and the probability is that each of these apian writers treated foul brood as lightly as did the late Colonel H. W. Newman, of Cheltenham, when in these pages he adopted the words of our immortal bard—

"He laughs at scars who never felt a wound."

Of foreign authors referred to by Mr. Woodbury, how different their experience! and yet it is a circumstance worthy of being noticed, that with the exception of Schirach, little reference is made to foul brood by old authors. In other countries as well as in this, *virulent* foul brood seems, comparatively speaking, a malady of recent years. On any other supposition it seems to me perfectly unaccountable that all our best apian writers should have made little or no allusion to such devastating ravages as are now experienced.

Of American authors, it is strange that while Mr. Quinby says that he lost a hundred colonies in one year from foul brood, the Rev. L. L. Langstroth states that the malady never made its appearance in his apiaries. Though Mr. Quinby could offer no solution of its origin, he believes it is contagious, and that the *virus* is contained in the honey.

The distinguished Lusitanian observer, Schirach, considered that foul brood may arise either from "the bees giving the brood unsuitable food, or from the queen depositing her eggs in a reversed position, so that the young bees, being unable to extricate themselves from their prison, die and putrefy. Sometimes also cold kills the young brood, and occasions putrefaction, but it is then, properly speaking, an accident and not a disease."

In Germany foul brood has been more severely disastrous than in any other country. The celebrated Dzierzon lost in 1848 no less than five hundred colonies from its ravages. He says, "This disease is of two kinds, one mild and curable, the other pestilential and incurable; both are infectious. The curable type manifests itself in this manner, most die in the unsealed stage. In the virulent the larvæ generally survive until they are sealed and have begun to change into nymphs. The curable type may in time degenerate into the incurable." I am not aware that Dzierzon has attempted any solution as to its origin, though he states it is readily introduced by infected honey from diseased stocks, and that it is contagious and infectious.

The Baron von Berlepsch, another most distinguished German apian, says of foul brood—"This disease varies considerably in its character, assuming either a contagious or a non-contagious form. Sometimes it is of so manageable a character as to be easily removed; and not unfrequently it spontaneously disappears." He states it may be communicated in a great variety of ways—such as by the bees, honey, comb, and pollen of foul-broody stocks, by the miasma of the surrounding atmosphere, &c. Berlepsch, however, does not know how it originates. "The question," he says, "is still involved in the greatest obscurity, and the opinions of bee-keepers differ extremely. I believe that foul brood, as it presents various phenomena and assumes various forms or grades, so it may arise from various causes." In advertising briefly to the views entertained of it by the most prominent writers on apiculture, he says, "It is believed by some that if brood which has died from any cause, is not removed by the bees it will become putrid, and produce a contagious disease—that is, non-contagious foul brood may under certain circumstances become contagious; this I conceive is only too likely." The Baron then gives a case where the bees of a hive had been suffocated while transported home,

and about eight days after, when the larvæ must have been as thoroughly chilled as could be, "a swarm was put in it, and thereupon the non-contagious foul brood immediately assumed the contagious form."

Now let us briefly restate the views of some of the writers in this Journal with regard to the origin of foul brood.

Mr. S. Bevan Fox, for whom as a thorough practical and experienced apian I entertain a high opinion, yet emphatically pronounced that "foul brood can have no affinity with chilled and abortive brood," and yet Mr. Fox, by what process of ratiocination is not discoverable, does nevertheless hint that very possibly foul brood may "under certain peculiar mysterious circumstances originate in chilled brood." I am sure, therefore, Mr. Fox will agree with me in this, that with the bare possibility of such a result occurring, the practice to which he alludes of sometimes introducing chilled and dead brood into hives, is one which cannot be too strongly condemned. Mr. Fox, however, in an article (March 21st, 1867), says positively that foul brood "was originated (in one of his hives) from excessive internal heat, and undue excitement consequent on the confinement and removal of the bees during a period of great heat and of great activity in working." This view is alluded to also by "A RENFREWSHIRE BEE-KEEPER," who reported previously a similar case, and to which I shall advert afterwards.

During the long discussion on foul brood it was my principal object and aim to ascertain its origin, indeed my whole efforts were to establish this point. On the other side no solution was then attempted. It was pronounced as an epidemic, a pestilence of whose origin all was mystery.

"B. & W.," the highly accomplished author of "The English Bee-keeper," thought it might originate by the continued use of deleterious artificial food (a view which is entertained by several apian writers of note, as in the case of feeding with fermenting honey) inducing weakness in the bees, or occasioning an injurious smell tending to the same result.

"A LANARKSHIRE BEE-KEEPER" in 1863 attributed abortive brood in his apiary to the use of straw hives, which being warmer in winter than wooden ones, he condemns, inducing the queen at times to oviposit unseasonably and to "spread her brood more than the bees are able to attend to if the weather turns colder." This I take to be, that under such circumstances the superfluous brood becomes chilled and dies, and the result is foul brood. In a subsequent communication in January, 1867, he says, "My experience with foul brood leads me to believe that instead of cold having anything to do with it, it is quite the reverse, and that it is warm weather which propagates it." And, lastly, in his communication in December, 1868, in advertising to Dr. Preuss's fungoid theory, to be afterwards noticed, he says, "I entirely concur with the views expressed by Dr. Preuss on foul brood."—J. LOWE.

(To be continued.)

WEIGHT OF BEES TO SIZE OF HIVES.

We publish the following queries sent by a correspondent, with Mr. Pettigrew's replies.

1st, What number of bees does it take to make a pound?

[I once weighed 1 lb. of dead bees, and counted them. If I remember aright they numbered 5700; but the numbers will vary considerably, according to the quantity of honey in their bags at the time of weighing.]

2nd, What size of skep will hold 100,000 bees, and how much honey will keep them till swarming time?

[100,000 bees will fill a very large hive in hot weather, and will creep into rather small compass in cold weather. In moderately fine weather at the swarming season, I should think that a hive 21 inches wide, and 12 inches deep, will hold 100,000 bees. A swarm weighing 8 lbs. of bees alone—say about 50,000 bees, is a large one. When describing the grandeur of 100,000 bees gushing from the hive in the act of swarming, the mistake of 100,000 instead of 50,000 was made, and I am glad to have this opportunity of correcting it.

Your correspondent must be excused for asking "how much honey will keep the bees till swarming time?" If he can find out by a long and laborious series of searching investigations the exact amount of commissariat stores necessary to keep a large healthy hive in a state of prosperity in summer, he will be able to tell a story of the industry of honey bees quite astonishing. Only think of the necessary waste by wear and tear of 50,000 creatures full of activity during the day! Who can measure or weigh it? Again, only think of the quantity of material necessary to rear the great sheets of brood that are formed in a hive during the spring months. I may help your correspondent a little by telling him that 1 lb. weight of moisture, or sweat, or vapour, escapes from a strong, full hive every night after sunset in warm weather. In the quiet cold months of winter bees do not eat much.

In ordinary winters a good hive of bees from September to March will consume about 15 lbs., and from March to swarming the consumption is enormous.]

3rd, How can bees be kept in their hives during snow without injuring them?

[In straw hives bees are not injured by having the entrances closed with anything while snow is on the ground.]

4th, What number of bees may be expected as a first swarm from so large a stock hive, and in what month?

[This question has been already answered in part. The time of swarming depends greatly on the weather, partly on latitude, and partly on the pasturage of the neighbourhood where the bee-keeper lives. Under good management, in ordinary seasons and circumstances all hives of bees should be ready to swarm in May, the earlier they swarm the better. In late localities, and where the brimstone rag is used, swarming does not generally commence till June. During the last four years—at least in three out of the four years—first swarms have been far too heavy for keeping as stocks. Many of them have been in weight upwards of 100 lbs. each, few below 80 lbs. each. It is the smaller hives—those that are least in weight, that are generally selected for stocks. In September the bees of the larger hives are driven out and united to the smaller ones, say 15 or 18 inches wide and 12 inches deep, weighing 40 lbs. or 50 lbs. Such hives cannot be surpassed for excellence, for they are prepared for all weathers, and for heavy work early in spring. Such hives are not easily obtained. How can anyone obtain possession of three such hives? Simply by purchasing six, putting all the bees into three of them, and taking the honey from the other three. When a hive tolerably full of honey and bees is marked for keeping and receiving an additional swarm in autumn, it is necessary to enlarge it for a month or two by an eke, thus making room for all. Early in winter or in spring the eke is removed.—A. PETTIGREW, Brighton Grove, Manchester.]

OUR LETTER BOX.

NOTICE!

NOTWITHSTANDING our oft-repeated request that no private letters be sent to any of our departmental writers, we regret to hear that the communications some of them receive, and particularly "WILTSHIRE RECTON," have become so numerous, and the expense and trouble incurred in replying to them are so great, that we must beg of our readers to be more considerate. All the gentlemen connected with this Journal have vocations of their own which demand their attention, and it is not fair that they should be subjected to a special private correspondence with the public generally, simply because they give utterance to their views through the pages of this Journal.

We therefore give this notice, that no letters written privately to any of the departmental writers will be answered, and those only will receive any attention which pass through the office in the ordinary way.

PREPARING A GAME COCK FOR EXHIBITION (T. P.).—For a few days, say ten, before a Game cock is exhibited, it is well to confine him. His very improved and improving condition makes him pugnacious, and he sometimes gets into trouble. Just at such a time a swelled face or a broken sickle become disadvantages. You may feed on white peas, meat, ground oats, and raw yolk of egg, a little at a time and often.

CHARACTERISTICS OF SILVER-PENCILLED HAMBURGS (A Subscriber).—A black beak would be a disqualification. Pullets should have clear hackles, well-pencilled bodies and tails; no mossings; smart tight combs, full of points, and turning up slightly behind; blue legs. The cocks should have dark sickles and coverts, edged with silver. The cock's body colour is white. In both, the ear-lobes should be small, round, and of startling whiteness.

EGGS ILL-FLAVOURED (Mrs. Whittaker).—Your fowls have access to some food that gives the taste to the eggs. Eggs may be made to taste of malt, garlic, onion, or anything else by feeding the hens upon them.

POWLS IN A SCARCELY SMALL SPACE (Philornis).—We cannot hold out much hope of success. Chickens want sunshine and will not thrive without it. Adult birds will do very well. Two such Houdans as you describe should weigh 15 lbs.

DORKING FOWLS (R. H. F.).—We advise you to keep Dorkings. The best birds we have of that breed are reared on the Sussex clays and in Lancashire. In such a place as you describe they will do well. They are the best for the table, they fatten more easily than any other, they are good foragers, they are good layers and mothers, they are not great eaters. There is no objection to an iron trough. The water should be often renewed. It is most injurious for them to drink stagnant and rain water, yet they will prefer it to all other.

DORKINGS (J. N. C. P.).—The cock being with other hens as well as Dorking hens, will have no influence over the chickens produced from the eggs of the latter.

HANLEY POULTRY SHOW.—We are informed that the extra prize given to Classes 77 and 78 was awarded to Mr. F. Sale's Magpies, and not to Mr. Bood's Dragons; and that in Archangels Mr. F. Sale was first, and Mr. Yardley second, and not as was stated last week, Mr. Yardley first and second. These errors are those of the official prize list, not ours.

NATIONAL PESTERIO NIC SOCIETY'S EXHIBITION.—We thank several

gentlemen for their notes upon this excellent show of Pigeons, but we think those of "WILTSHIRE RECTON," which we published last week, embody all that need be said.

LIVERPOOL POULTRY SHOW (An Exhibitor).—You must see the railway company, and prove that the cockerel was delivered with the pullets.

OLDHAM POULTRY SHOW.—"The Committee of the Oldham Show propose to pay me 7s. 6d. in pound upon the premiums I gained there. Please inform me whether they are liable for the full amount of the premiums they offered.—C. SINGWICK, Ryddlesden Hall, Keighley."

[We consider that the Committee are liable for the full amount of the prizes they offered, and by offering a composition they have acknowledged their liability.]

PIGEON PORTRAITS (W. C.).—Write to Mr. Wolstenholme, 3, Elizabeth Cottages, Archway Road, Highgate.

PIGEONS DISEASED (Fido).—Your Pigeons have the oil, and, to young birds especially, very fatal disease called canker. Remove the lump with a knife or thin piece of wood, and apply the solid point of lunar caustic. Keep your loft very clean, and not too many birds in it; change their food, and, if possible, let them fly, separating the healthy from the diseased birds.

CANARY LOSING ITS FEATHERS (C. G.).—Try a little linseed in place of the hemp, with a little hard-boiled egg once or twice a week.

BREEDING GOLDFINCH MULES (E. G.).—There will be no difficulty in breeding Goldfinch and Canary Mules from the Goldfinch hen that laid last year without having a mate, if the Canary is introduced about the middle of May. Much depends upon the part of country where you reside as to the time when the hen is likely to go to nest, as there is a difference of a week or two in different temperatures; but about the middle of May will be a good time. Supply the birds with an ordinary nest box and material (moss and soft doe hair), and the hen will construct her nest and go through the whole process of incubation, and produce, in all probability, dark Goldfinch Mules. I say dark ones, as in the only similar case which has come under my notice the young ones were all dark. The hen I refer to was the property of G. Sidel, Esq., of Sunderland, and a more attentive mother I never saw. She had several nests in the season, but I believe brought up one lot only. The Mules were rather longer than those bred in the usual way, and much more like the Canary about the head. I should endeavour, if possible, to get her off hemp seed. She may do well on it for a while, but it is apt to disagree with Goldfinches if too freely supplied. However, there are differences of opinion on this point. At any rate, mix canary seed and summer rape with the hemp, and gradually increase the one and decrease the other.—W. A. BLAKSTON.

GOLDFINCH VIOLENT IN HIS CAGE (A Tender-hearted Lady).—"I am afraid you have been imposed on by some unscrupulous dealer; but there is a great difference in the character of Goldfinches. Some seem to submit to captivity, as if they had accepted it as a necessity, taking possession of their cage as though they had known all about it from their infancy, going to their seed-box and water in a business-like, methodical, matter-of-fact fashion, and sitting quietly on the perch with a kind of stolid indifference to change of circumstances, which it is amusing to witness. Others seldom rest, except at long intervals; but nearly all soon lose that wild, frantic fluttering about the cage, that hopeless struggle for liberty which they make on being first captured. By 'newly caught,' we understand fresh from the nets, or very recently caught, and the bird in question is most likely one of this description, and will, in all probability, soon quiet down and become resigned to its condition. But 'newly caught' is also sometimes used in distinction to a bird moulted in the house, not a moulted grey-pate or nestling, but a year-old bird which has been kept in confinement and there moulted. The one is easily distinguished from the other, as the 'flourish' round the beak loses its brilliancy and assumes a brownish tinge, and the legs change from black to almost white in the house-moulted bird, while the wild, fresh-caught specimen has black legs and a brilliant crimson blaze round the beak. There is no fear of its companions molesting it if set free, nor do I think they would even if by any freemasonry it could convey to them the sad story of its captivity.—W. A. BLAKSTON."

BREEDING FROM YEAR-OLD CANARIES.—"C. A. J." answers his own query as far as regards the practicability of breeding from young birds, inasmuch as he has already done so. I had about twenty pairs 'up' last season, and I think I had only three old cocks among them, and must certainly say, for the author quoted to lay down for the guidance of breeders, that the cock ought to be 'two years old' and the hen a 'little older,' is nonsense. If the cock be two years old and the hen a 'little older,' she must be three years old at the least, calculating as birds' ages are calculated. By all means breed from young birds. Their instincts and physical capabilities speak for themselves. As an abstract question as to whether the progeny of young or old birds is most likely to inherit the parents' good qualities, I can only say, as a matter of experience (and hearsay should never enter a practical treatise), that I never noticed any difference in my own.—W. A. BLAKSTON."

THE STEWARTON HIVE (J. Dixon).—"It is 14 inches wide by 6 deep; honey and body or breeding boxes (the latter 4 inches deep, being alike furnished with seven fixed bars 14 inch broad, and the latter having a firm cross-stick for the support of the combs, as Ashshire bee-keepers generally transport their stocks from earlier to later white clover districts, and complete the season by giving them a trip across the Frith of Clyde to the heath-clad hills of the island of Arran; three body and two honey boxes being reckoned a set for the reception of a single colony. My way of improvement I have all my hives made in Stewarton increased in depth to 7 inches, in conformity with my square hives, and have increased the number of bars to eight, the six central ones being 11, retaining the 14-inch ones merely for the broadside honeycombs. These are all moveable and retained in their places by half-inch brass screws, and are in addition provided with the Woodbury rib, while the greater number of my boxes have frames attached to the bars, in which case the rib is better omitted, and, of course, have no cross-sticks. You had better write to Mr. Eaglesham, Stewarton, Ayrshire, for a set of boxes—printed instructions usually accompany as to management; or you could order merely one body and one honey box as a pattern; but you will find no carpenter in your district can compete with Stewarton-makers' prices. The 6-inch box with cross-sticks will suit best. The Stewarton hive offers such facilities for supering and nading, that under judicious management swarms never emerge save in rare exceptional cases, which I have yet to meet with. By restricting the accommodation, swarms come away as readily as from any other hive.—A. RENFREYSHIRE BEE-KEEPER."

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 4-10, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
4	Th	Meeting of Royal and Linnean Societies.	44.9	32.9	38.3	20	36	af 7	52	af 4	27	af 11	23	14	13		35
5	F		45.6	33.7	39.6	20	34	7	54	4	36	2	56	11	24	14	17
6	S	Royal Horticultural Society, Promenade.	46.4	32.8	39.6	21	32	7	56	4	41	3	after.		25	14	21
7	SUN	QUINQUAGESIMA SUNDAY.	46.9	32.8	39.8	23	30	7	58	4	40	4	34	0	26	14	25
8	M	Meeting of Royal Geographical Society.	45.6	32.8	38.9	22	29	7	0	5	32	5	18	1	27	14	27
9	Tu	Royal Horticultural Society, Annual	45.3	31.5	38.4	17	27	7	2	5	17	6	9	2	28	14	29
10	W	[General Meeting, 3 P.M.]	44.7	29.8	37.2	16	26	7	4	5	54	6	4	3	29	14	29

From observations taken near London during the last forty-two years, the average day temperature of the week is 45.6°; and its night temperature 32.3°. The greatest heat was 65°, on the 10th, 1831; and the lowest cold 10°, on the 5th, 1830. The greatest fall of rain was 0.67 inch.

ROSES ON THEIR OWN ROOTS.

OF all the methods of cultivating the Rose perhaps none has been more generally adopted than that of budding on Briar stems to form standards. This mode of culture may be very suitable for some soils, but it is, nevertheless, a most stiff and ungraceful one, to which we cannot find any similarity in nature—a safe guide in all such matters. In my opinion, no form can be more elegant in outline, or more pleasing to the eye, than a pyramidal or cone-shaped bush, no matter whether it be a dwarf plant 3 or 4 feet high, or a lofty pillar of 10 or 12 feet, provided its height be adapted to its position. To obtain such plants, I know of no better or safer plan for cultivators generally than to have them on their own roots. I know that Manetti has its advocates in some of the most eminent rosarians, yet if a tolerably good loamy soil can be had, and a fair supply of manure and liquid stimulants afforded, no one need fear the result when planting Roses on their own roots, or despair of success, even if it is eventually intended to exhibit blooms at the "National" or elsewhere; for Roses grown in this way, if rightly managed, are quite equal in size, number, and beauty to those which may be produced on any other system, and are quite fitted to compete even with those grown on the redoubtable Manetti.

The advantages of growing Roses on their own roots are obvious. If the winter is so severe as to kill the plants down to the mulching or snow line, which, it is true, does not often happen—yet if such should be the case, the plants are quite certain to break into strong growth in the spring, and to produce some good blooms in summer. Or, if the plants should throw up suckers (and if the requisite high culture is afforded, some suckers are certain to make their appearance), these, instead of being a pest, are most useful; for by pinching the tops off the suckers at any suitable height, side shoots are formed, which are very serviceable in filling up any vacancy, or in making the plant more bushy. Then, again, no method can compare with this for obtaining a well-shaped plant, with fine robust wood, in a short space of time, as a period of two years from the time of making the cutting is all that is required to produce handsome pyramidal plants of from 3 to 4 feet high, and from 2 to 3 feet in diameter at the base. The only forcing which the plants have, if it can be called forcing at all, causes that quick, strong growth of the roots and branches which is to be obtained by a judicious use of guano water, or any other stimulating liquid manure; for no matter how gross may be the growth of the plants, all may be kept well in hand by judicious and timely pinching; in fact, if the plants grow as vigorously as they ought to do, they will require pinching and training almost weekly, especially in the second year.

Here I would advert to an error in Rose-culture which I have frequently noticed in the pages of this Journal—namely, the wonderful growth of shoots 8 or 10 feet in length which some highly cultivated Rose trees are said to produce in one season. Now, if such shoots are in-

tended to be pegged down, to form a bed or to cover a bank, they would, of course, be most useful; but if they are the offspring of dwarf bushes or standards, then I venture to think it is so much vigour wasted, which, if the shoots had been stopped in time, would have given many strong, healthy, dwarf shoots, instead of a giant one, and which would have gone far towards the formation of a handsome bush. Moreover, should this pinching cause a superfluity of shoots, they can not only be cut off in the pruning season, but they will also offer a much better choice of wood to the knife and judgment of the pruner. Even in the case of old-established plants, the gross shoots might advantageously be made to afford some fine autumn blooms, rather than be allowed to run to waste. Such rampant shoots must also cause the rosery to present a rough and untidy appearance.

At no better time can Rose cuttings be made than directly after the first or summer bloom is past. Stout firm wood of the current year's growth, and which has carried a truss of bloom, should be selected for cuttings, which, when made, should not be longer than 6 or 7 inches, including 2 inches to be inserted in the soil. This length will admit of two, and in close-jointed wood of three eyes, with a portion of each leaf on the upper part of the cutting. A small portion of the old, or last year's wood, must be left at the base of the cutting to form what is termed a heel, as in *fig. 1*.



Fig. 1.



Fig. 2.

which represents part of a finished cutting ready for inserting in the soil, *fig. 2* showing the branch from which the cutting was taken. This heel is quickly coated over by the callosity, which soon begins to form, and from which the roots readily start.

In ordinary seasons the cuttings will have made roots enough to bear removal in March; but I may mention as a result of the extraordinary mildness of the present winter, that I have now a boxful of well-rooted cuttings with shoots an inch long, which were put in last August, and have had air constantly day and night. I do not think anything will be gained by such an early growth, as it will be unsafe to plant-out the struck cuttings till all danger from

severe frost be past. No artificial heat is required to cause the cuttings to strike root. A sheltered spot in the open garden is selected, and to one part of common garden soil I add one part of well-rotted dung, and two parts of good, white, sharp sand. The soil is settled firmly with the back of a spade, and a hand-light, or small box and light, is placed on the soil, in which the cuttings are closely and firmly inserted.

The small portable boxes which I employ are most useful for the above and many other purposes; they measure 2 feet 1 inch, by 2 feet 4 inches; the front board is 6 inches deep, and the back board 9 inches, which gives just sufficient slope to the light to carry off rain. The light is fastened to the back board by hinges. One of these boxes will contain thirteen rows of cuttings, twelve in a row.

Air is constantly given the cuttings throughout the winter, excepting in severe frosts, when a slight but ample protection is afforded by means of a little dry litter scattered loosely over the box.

About the third week in March, the cuttings, or, as they must now be called, the young plants, are removed to a well-trenched border, into which a layer of rotten dung, pounded charcoal, and sand has been well worked, the soil being, if possible, a good sandy loam. A distance of 18 inches from plant to plant will afford ample space for the first year's growth. The soil is settled firmly round each plant, and a stout galvanised iron wire is stretched along each row, and strained tightly on two stout stakes, placed at either end. To this wire each plant is fastened as soon as it has made growth enough to require a little support. The wire is preferable to stakes, as it is more quickly put up, has a very neat appearance, gives ample support to the plants, and prevents any injury to the roots, which are always to some extent in danger when stakes are used. Once a week a watering of weak liquid manure is given, and it is increased in strength and quantity as the plants advance in size; a mulching of rotten dung is applied, in addition, to the whole of the border in June.

No attempt is made to train the plants during the first summer, but close pinching is practised from the beginning, so that a close bushy base is formed before the plant is allowed to attain much height. This is of the greatest importance, for if it is neglected at first, hardly any after-culture will be effectual as a remedy. To varieties of a loose straggling habit of growth, two leading shoots are left, so that a compact bushy plant may more surely and quickly be formed. The pinching is discontinued as autumn approaches, by which time neat little bushes of about 18 inches in height, and as much in diameter at the base, will have been formed.

Early in November the plants are removed to their permanent position, and I need hardly say that the soil must be carefully prepared to insure success. It should be well drained, trenched deeply, and plenty of rich dung and some charcoal ought to be well incorporated with it. The distance to be allowed between the bushes will depend very much on their position and intended height. If they are to be from 4 to 5 feet high, 5 or 6 feet apart will answer very well, but if it is intended to take them much higher, there must be a proportionate increase of distance. A stake is now given to each plant, not only to keep it steady and so enable it to make roots at once, but for training it to in the following summer; and as the stake is driven into its place before any young roots have started, all injury to the roots is avoided. A slight mulching of rather long dung is given. Plants thus treated will make during the winter months many roots, which will be very conducive to a robust growth in the following season. A liberal dose of guano water is applied two or three times during the autumn. A slight pruning of the stronger shoots is necessary, and all weak shoots are cut clean out.

In the next or second summer the training commences. The young plants, though small, are full of vigour, and start quickly into growth as the spring advances; pinching at one, two, or three eyes must begin at once, and as the bushes attain sufficient size, the lower shoots are tied to a hoop of galvanised iron wire, which is fastened to a circle of about 2 feet in diameter formed by slight stakes. The tops of the stakes also serve to tie the upper branches to; for as all the shoots naturally have an upward tendency, some are brought down to the wire hoops, and thus the pyramid has a substantial base, above which the branches rise tier upon tier, narrowing upwards to the apex.

Surely a plant like that just described must be far more slightly than a mop-shaped standard, or the miserable straggling bush, so frequently met with, and that is condemned to the

annual removal of excessively strong shoots on the production of which its vigour has been wasted. Such a plant can never be looked upon with that thorough admiration which a finely-shaped pyramid, laden with charming blossoms, must ever command. It is certain that all real lovers of the Rose must possess a refined taste, and therefore why should the eye be so constantly offended by an unsightly bush, which, with a little more care, might have been made to assume a graceful outline?

I suppose it will be quite obvious that no flowers are allowed to be on the plants for the first two years, with the exception, perhaps, of a few late autumn blooms produced in the second season. And here it is, in my opinion, that in most cases an error is committed. Why should a Rose not have time to mature its growth before a crop of flowers is demanded from it? If we plant a fruit tree, do we not wait till it has attained sufficient size and vigour before it is allowed to produce fruit? and is not this law of Nature just as applicable in one case as the other? I am quite certain that all who have the courage to pick-off the flower buds during the first and second years, are abundantly rewarded by the additional splendour of the plant in its third, or blooming season.—EDWARD LUCKHURST, Egerton House Gardens, Kent.

FLOWERS OF THE PAST SEASON.—No. 2.

SHOW PELARGONIUMS.

THE work that has been done by the hybridiser of late years in regard to the Pelargonium is something marvellous. Every section has its novelties, and both foliage and flowers have received touches of an enchanter's wand, making transformations as wonderful as any that harlequin's wand effects in Christmas pantomime. In some classes, such as the Show varieties, the progress, owing to the perfection already attained, has not been so great as in some other sections—indeed it seems to be almost impossible to excel the varieties already in cultivation; yet last year we had some very decided improvements in this section, as this season there are in Fancies.

I had to move all my plants last April to my present residence, and hence they were not in such good condition as I could have wished; however, on examination of them compared with Mr. Turner's, I have made the following notes:—

Archduke.—A painted flower, with white centre. Not a great advance.

Autocrat.—A pink flower, with dark spot in upper petals; white eye. Good.

Captain John.—Lilac rose flower, painted; dark maroon top petals.

Empress.—A well-shaped rose-coloured flower, with white eye; very stout in petal.

Emperor.—A very pleasing flower, with a peculiar shade of salmon pink, with maroon spot. One of the best flowers of the year.

Example.—Rich crimson-rose flower; good habit; white centre. Very free in blooming, and altogether excellent.

Fervacques.—Delicate rose, tinted.

Firefly.—Small flower, but very bright. While not an exhibition plant, yet very useful in the greenhouse.

Grandee.—Mottled rose; black top petals, rosy margin. Good.

Heirloom.—Bright orange pink, with shaded blotch. Good habit, and free bloomer.

Hermit.—Light rose-coloured flower, maroon spot, white centre. A first-class flower.

Keepsake.—Deep rose, painted, with dark maroon top petals.

King of Trumps.—A pretty flower; orange rose colour, maroon spot.

Legacy.—Rosy lilac, tinted lower petals.

Magician.—Purple flower, in the way of Diadem, white eye.

Miss Harvey.—A painted flower; pretty enough, but no more.

Needle Gun.—Very bright in colour, with intensely dark upper petals.

Patrimony.—Rosy pink, with white centre.

Prince Consort.—Bright cerise, with a slight orange shade. A good flower.

Prince of Orange.—Dark flower, with rich deep crimson lower petals.

Robin Hood.—A fine-shaped flower, rosy lilac in colour, and a free bloomer.

Rob Roy.—A very fine purple flower, with very dark top petals, white eye. A first-class flower.

Saur de Charité.—Rich painted orange-rose flower, with

maroon top petals. A very fine flower, though somewhat later in blooming than the other varieties.

Sunbeam.—A useful free-blooming variety.

Victor.—A very fine flower; rosy lower petals, tinted with orange and red; rich maroon top petals. Excellent habit, and good shape.

Woman in White.—A white flower, but no great advance on previous kinds in the same strain.

Of the whole selection, then, I consider Captain John, Emperor, Example, Heirloom, Hermit, Rob Roy, Sœur de Charité, and Victor to be the best; and I would place after them Auto-rat, Empress, Needle Gun, Prince Consort, and Robin Hood. The others I would consider as third-rate flowers, but many of them most useful on a stage.—D., *Deal*.

NOTES ON A FEW FERNS.

In your Journal of January 21st I observe some recommendations as to the mode of growing *Asplenium septentrionale*. I am sure the method recommended would not answer here. We have a very good collection, particularly of English Ferns, and a good many fine exotic ones. We have three plants of *Asplenium septentrionale*; one has been here about nine years, another was brought here in 1864, another less than two years since. Two out of the three look very well. They are potted in sand, or sand and old mortar, and peat, between small pieces of freestone. Till this year they have been kept in the greenhouse; they have since been in a cold frame, and I cannot say that it answers quite so well. Some years ago the first of these plants was kept during the winter in the dining-room, looking to the north, in a flower stand. Through that season it had only one green frond, but recovered, and has since been doing well.

We put our plants out in their pots in the fernery in the summer, and they grow vigorously; but we live in a Fern country. One side of the great Cader Idris, a mountain near here, is almost covered with *Allosorus crispus*. The only Fern with which we have had any great difficulty is *Polystichum lonchitis*, but we have now one strongly-established plant in the open rockwork, and another in a cold frame. *Woodsia ilvensis* does well out of doors, with a bell-glass over it in winter. It is planted in the soil of the out-of-door fernery. *Asplenium lanceolatum* is a native of this country, but when in cultivation, even here, it does much better in the cold frame or greenhouse than when left out. *Hymenophyllum Wilsoni* succeeds under a bell-glass, the plant having a block of sandstone, or a garden saucer inverted, laid under it, with a little peat soil immediately under the Fern. Every two or three days it is sprinkled with water. We are about three miles from the sea, which is west of this place.—N. E. OWEN, *Gardener to W. W. E. Wynne, Esq., Periarth, Merioneth*.

P.S.—*Maréchal Niel* Rose has grown vigorously in the kitchen garden as a standard this year. It was covered with buds, even to December, but they did not come out well. The plant has now been removed to a south-west wall, and I have no doubt next year will be a mass of well-blown flowers.

THE CHOCOLATE PLANT.

DR. MOORE, Director of the Botanic Gardens, Glasnevin, exhibited a fine plant of the *Theobroma cacao*, or Chocolate Plant, in fruit. He stated that it was the first time he had known this rare and interesting plant to bear fruit under cultivation in any place in Ireland, or probably in Great Britain. It belongs to the natural order Byttneriaceae, which comprises some plants which have rather showy flowers, but those of the *Theobroma* were the reverse, being small and inconspicuous, so much so that they might easily be passed over by a casual observer without being noticed. He stated, further, that they grew from the bare parts of the stem of the plant, unaccompanied by leaves.

The plant flowers at Glasnevin every year, but had never before borne fruit. He noticed the latter forming about two months ago, and supposed it might be about two-thirds grown, judging from a fruit of the same species of plant he held in his hand from Demerara. That exhibited was rather more than 6 inches long, and was attached to the stem of the plant near its base.

In a statistical point of view he mentioned that the seeds, when grown, became our cocoa of the shops; when reduced to paste, sweetened with sugar, and scented with vanilla, our

chocolate, of which between a million and a half and two millions of pounds are consumed annually in the United Kingdom, and much more in Spain, compared with the number of inhabitants.—(*Irish Farmers' Gazette*).

TYING DOWN YOUNG VINE LATERALS.

I WENT to see an old friend who was tying down the young laterals of his Vines last spring, and these being remarkably vigorous he broke many off during the operation; but I soon relieved him of his anxiety on that account, by showing him a method which I have practised successfully for some years. As he was a gardener of some years' experience, I had a somewhat hard task to persuade him to adopt it, but he did, and the results were satisfactory. As there are others to whom the knowledge of it may be of assistance, I will here state what it is. I simply take the lateral by a joint in my left hand between the thumb and forefinger, and twist it as I should a wet, only of course no more than is necessary to make it sufficiently pliable to come down to where it is wanted. I sometimes twist between the first and second joints, and then between the second and third joints, if very stubborn, so as to get the future bunch where I want it, and always with the best results, and the fruit is always quite equal to that on shoots which do not require such treatment to bring them into subjection.—W. GULDERSFIELD.

TONGUEING THE MANETTI STOCK.

As the Manetti-stocked Rose, after planting, should as quickly as possible throw out its own roots from the collar of the bud, I recommend to my Rose brethren a very simple and sure method of making it do so, by tongueing—that is, paring up the smallest strip of bark, about an eighth of an inch wide, on both sides of the collar or point of union with the stock. Plant this tongued part 1 inch or more under the soil, and mulch the surface. The operation of tongueing does not take more than a minute to perform, and induces the certain and rapid production of rootlets from the most desirable point, as in some cold, stiff soils, and with many thick-barked Hybrid Perpetual and Moss Roses, the operation of rooting is often slow and uncertain.

I have not tried tongueing with the Briar stock when there is a deficiency of roots in the right place; but I think it would be likely to answer. Established plants on the Manetti or Celine stock may be easily operated on by removing a little of the soil from around their stems.—HENRY CURTIS, *Devon Rosery, Torquay*.

METEOROLOGICAL NOTES, 1868.

AUDLEY END, SAFFRON WALDEN.

RAIN-GAUGE 5 inches in diameter, and 1 foot above the ground. Ground thermometers plunged in light garden soil, and that at 6 inches deep read, at 9 A.M.; that at 12 inches deep, at 9 P.M. Position, 140 feet above the sea level.

	TEMPERATURE.				Amount of Rain in inches.
	AIR.		EARTH.		
	Mean Max.	Mean Min.	Mean at 6 in.	Mean at 12 in.	
January	41.06	33.47	36.38	39.48	2.445
February	49.23	37.22	40.37	44.53	1.895
March	51.32	35.69	42.37	48.53	1.660
April	57.07	38.74	47.16	48.40	1.455
May	68.01	44.21	58.37	59.60	0.635
June	73.37	48.60	66.15	66.85	0.610
July	79.33	53.30	70.27	71.53	0.190
August	72.84	54.14	65.27	67.00	2.260
September	69.37	47.07	60.10	62.83	1.405
October	55.36	39.01	47.50	49.98	2.290
November	45.56	35.73	41.80	43.13	1.475
December	49.46	39.44	42.54	43.56	3.915
Mean	59.42	42.21	51.52	53.28	19.735

—J. BRYAN.

CARTER'S CHAMPION CUCUMBER.

THIS winter, with a dry plain brick flue, I have reared from seed and fruited Carter's Champion Cucumber, with six fruit swelling at one time on one plant in a 16-inch pot; the fruit

fit to go to table whole, straight and good as could be, and grown without the slightest bottom heat during any age or stage of growth. Now, if there is anything novel in perfect success without bottom heat, and with a very low temperature (ranging from 55° to 75° during sunny days), my experience may be worth recording. My opinion is that the constitution of Carter's Champion Cucumber, for cultivation in a low temperature with no bottom heat, and in a dark dull winter, combined with the excellent quality of the fruit, entitles it to be better known. I have grown it nearly 2 feet long in summer. It will be my main frame variety this summer, being quite long enough for regular use, and of a flavour that cannot be surpassed.—LEE ROGERS, Gardener to Rowland Hunt, Esq., Kibworth Hall, Leicester.

MANLEY HALL, STRETFORD, MANCHESTER.

THE RESIDENCE OF SAM MENDEL, ESQ.

(Continued from page 7.)

THE Orchid houses, which are under the management of Mr. W. Milford, are very well adapted for the cultivation of these beautiful plants, and here, as well as in Mr. Petch's department, great changes for the better have taken place. The general impression has hitherto been, that when once Orchids are in a sickly state it takes a long time to bring them again into a healthy condition. Many of the plants when I saw them two years ago were in a wretched state, but they are now in perfect health and growing vigorously.

The East India house, the first I entered, is span-roofed, 65 feet long by 20 wide, with the ends due north and south, and is in two divisions. It has a 9-foot wide central stage on which the largest specimens are placed, those of less size being arranged on the side shelves; these are 2½ feet wide, and formed of slate slabs covered with white Derbyshire spar, and the ground beneath the stages is also covered with the same material. The walk round the house is 3 feet wide. The house had originally a double roof, but here, as at several other places, this has been found unnecessary. The first remarkable plant that met my view was *Dendrobium Falconeri*, suspended over the path. The plant is growing in a shallow basket not more than 6 or 8 inches square, and about 2 inches deep, and has five shoots, which are trained over the path in front of the door; the longest is about 4 feet 6 inches in length, and, like the others, is clothed with eighteen lateral branches, all of which are very strong. The plant is nearly 9 feet across from point to point, and will, no doubt, produce a large number of flowers. Opposite the door is a group of *Nepenthes*, the most conspicuous of which, a specimen of *N. Raflesiana*, had sixteen pitchers in various stages of development, and some of these would hold more than a pint of water. The leaves from which the beautifully mottled pitchers are suspended are more than 2 feet long. On the centre stage there is a luxuriant collection of *Aërides*, and among them the following:—*A. Lobbi*, a splendid *A. Farmeri*, 18 inches high and having fourteen fine leaves, a rare and beautiful variety; *A. Mendeli*, very much like *A. Larpentæ*, the only plant of the kind in the country; and *A. Huttoni*, a beautiful species sent home by Mr. Hutton, and lately distributed by Messrs. Veitch and Sons. It was bearing a pretty spike of lilac and mauve flowers, which Mr. Milford informed me had been open for upwards of two months. There were many fine *Calanthes*, such as *C. vestita* *Torneri*, *C. Veitchii* *superba*, and *C. vestita* *lutea*, of which the yellow-eyed variety had seventeen spikes of bloom, some of them 5 feet long and with very large flowers.

Of *Cypripediums* there is a very fine collection. On a plant of *O. Lowii* I noticed fourteen flower spikes, and it had seven leading growths. Others consisted of *C. Stonei*, *C. Hookeræ*, *C. Pearcei*, *C. Schlimii*, *C. cordatum* with about twelve leading growths, *C. cordatum* *giganteum*, and *C. laevigatum*, found growing by Mr. J. G. Veitch by the side of *Vanda Batemanni*. I also noticed the pretty *C. concolor*, one plant of which had eight spikes. Its yellow and spotted flowers contrast well with the beautiful foliage, which is nearly as handsome as the most beautiful of the *Anæctochilus*.

One of the most promising of the fine collection of *Dendrobiums* was a fine plant not quite so large as that before alluded to, and to all appearance a different variety, as it is much more sturdy in its growth, and more like *D. nodatum*. Of *D. formosum*, one of the best of the numerous family of *Dendrobies*, there were two fine specimens having eight or ten leading growths, also a fine plant in full flower. Where there is

a stock of this charming Orchid, by ripening-off plants at different times a succession of its beautiful flowers may be maintained at different periods of the year. Of other species I noticed *D. primulinum*, *D. chrysotoxum*, and *D. albo-sanguineum*; and among *Oncidiums* fine plants of *O. ampliatum* *majus*, *O. Barkerii*, *O. crispum*, *O. Lanceanum*, *O. papilio*, and *O. phalaenopsis*.

Of the beautiful *Phalaenopses* there were some of the finest specimens to be seen in the country, one being a very fine variety of *P. amabilis*, with five spikes of flowers, in which the various shades of yellow, crimson, and pink on the inside, surrounded by the snow-white petals, were exceedingly beautiful. There were also fine plants of the *P. Lowii*, *P. grandiflora*, and *P. Lüddemanniana*, the last with two spikes, each nearly 4 feet long. The most remarkable, however, of this family were two or three plants of *P. Schilleriana*, with flower spikes upwards of 4 feet long, and having nine lateral branches, and some of the leaves measured 15 inches by 5½.

Of *Saccolabiums*, Mr. Mendel has an excellent collection, the most notable being *S. ampullaceum*, the varieties of *S. guttatum*, *S. præmorsum*, *S. Holfordii*, *S. curvifolium*, *S. violaceum*, and *S. giganteum*. The *Vandas* were also well grown and in great variety; amongst these were *V. Batemanni*, *V. gigantea*, *V. Lowii*, and a good plant of the true *V. insignis*, lately introduced by Mr. Veitch.

The *Cattleya* family is well represented; these are principally grown in the southern division of the house, which is kept a little cooler than the other portion, and comprise large masses of *C. superba*, *C. crispata*, both the summer and winter-flowering varieties of *C. labiata*, *C. Aclandiae*, and a fine plant of *C. crispata* *superba*, which Mr. Milford considers equal in beauty to Mr. Dominy's fine new hybrid, *C. exoniensis*. He thinks that *C. crispata* *superba* is one of the parents of *exoniensis*, *Lælia purpurata* not having the delightful scent of *C. crispata* *superba*. The latter has a seed pod on it nearly ripe, from which Mr. Milford hopes to raise some fine and highly-scented varieties. Of the beautiful and scarce *Cattleya Dowiana* there are several plants, as well as of *C. Eldorado*, one of the finest varieties; also a large stock of the summer-flowering variety of *C. labiata*, from the late Mr. Turner's collection.

Of the beautiful and useful *Cologyne cristata* there are several fine specimens, two of which, from the celebrated collection of Mr. R. S. Yates, measure 4 feet across, and are in perfect health.

Amongst cool Orchids I noticed fine specimens of *Cynoches barbatum*, a very rare plant; *Dendrochilum glumaceum*, *Anguloa Clowesii*, *Barkeria spectabilis*, *Cymbidium giganteum*, with fine spikes of bloom on it; *O. eburneum*, one of the finest of cool Orchids; *Disa grandiflora*; and several of the beautiful *Pleiones* covered with flowers. On one plant of *Pleione macrantha* I counted twenty-four flowers, and *P. maculata* was equally fine. There were, too, several plants of *P. lagenaria*; in one pot of this there were twenty-four bulbs, on which I counted sixty-four blooms. *Pleione Wallichiana* is a very distinct and beautiful species; some of its late-flowering bulbs measured 7 inches in circumference, and were the finest I have ever seen. In a group several plants of each species were completely covered with bloom, and looked extremely beautiful. There were also large plants of many varieties of the beautiful *Lycaste* and *Miltonias*; and the *Odontoglossums* are numerous represented, comprising *O. Uro-Skinners* with three flowering spikes nearly 4 feet in length, *O. Insleayi* with four good spikes, *O. grande*, *O. hastilabium*, *O. luteum*, *O. maculatum* showing eight spikes, *O. nebulosum*, *O. Pescatorei*, *O. Rosii*, and *O. phalaenopsis*, the last-named having several fine spikes of flowers, and about twenty young growths. In the same house were fine plants of *Masdevallia Veitchiana*, *Warscewiczella discolor*, with its pretty Iris-like flowers; *Trichopilia suavis*, *T. tortilis*, *T. superba*, *T. crispata*, and others.

In the East Indian division I noticed several kinds of the pretty *Anæctochilus*, and more particularly the *A. Dawsonianus*, lately introduced by the Messrs. Low, which I consider the best of all, being of much stronger growth, more easily propagated, not requiring so much care in its cultivation, and having all the beautiful markings of the more delicate species and varieties.

The next house I entered was filled with a fine collection of cool and temperate Orchids. This house is 55 feet long by 16 feet wide, and in its arrangement is similar to that previously described. Opposite the door is a beautiful mass of foliage and flowers, formed of the following plants, which were very tastefully arranged, and which produced a very striking effect:—*Gesnera refulgens* with its beautiful crimson velvet leaves,

Begonia Pearcei with its fine yellow flowers peeping up amongst the *Gesnera* leaves, the new hybrid *Calanthe Veitchii*, *Odontoglossum grande*, *Oncidium Barkeri* with two fine spikes of its brown and bright golden flowers, and a *Vanda cærulea* with a fine spike of its pretty mauve and sky blue flowers. This is a charming Orchid, and one of the most useful, as it continues a very long time in flower. The group was surmounted by a plant of *Calanthe vestita*, 7 feet across, and with sixteen spikes, some of them nearly 5 feet long, and covered with pretty white flowers; many of the spikes had lateral breaks near the base, which were also clothed with bloom—a very unusual occurrence. The effect produced by this mass of *Calanthe* spreading gracefully above and between the bright foliage of the *Gesnera* and the other flowers, can be better imagined than described. In the same house there are noble specimens of *Lælia majalis* and *L. autumnalis*, the latter consisting of upwards of one hundred strong bulbs on a long block of wood, and having eight fine flower spikes, some of which exceeded 3 feet in length; also *Odontoglossum Ehrenbergii*; plants of the curious *Dionæa muscipula*; *Anguloa Clowesii*, with its large shining bulbs; *Lycastes*, *Sobralias*, *Zygopetalums*, *Odontoglossum Bluntii*, *O. Alexandra*, *O. pulchellum*, and quantities of the pretty *Oncidium ornithorhynchum*, in 60 and 48-sized pots, literally covered with flowers. Nothing could be more beautiful than this little gem for drawing-room decoration, as it lasts so long in full beauty, and when accompanied with Ferns and other plants it has a very pretty effect. These houses contain many other plants of great merit, all of which are in excellent condition.

On leaving the well-kept Orchid houses, which contain so many plants sent home by Skinner, Bowman, Pearce, and Hutton, it was sad to reflect that in less than two years the lives of so many men should have been sacrificed in exploring fresh fields for the purpose of adding to the gratification of those who take an interest in this particular class of plants, and who little know what trials and difficulties have to be encountered. Such men cannot have any thought of gain when they go out in search of new plants; they can only be led to do so from the love they have for them, and from an uncontrollable anxiety to see them in their natural state.—J. WILLS, F.R.H.S.

(To be continued.)

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

(Continued from page 65.)

If I can avoid it, I never disturb a bad subsoil when preparing to plant Vines, or any other fruit tree; beyond 2 feet deep one need not go. If the surface soil is only 1 foot deep, procure a sufficient quantity of the compost which I shall presently describe, and let it be raised above the natural level of the soil to the desired thickness. It is far better to do this than to work up a poor or wet subsoil in order to obtain depth. The higher the roots are, and the more efficient the means adopted to prevent them entering the above descriptions of subsoils the better; and one of the modes most generally available for preventing the latter result, is to place a layer of stones so thickly and compactly over the subsoil that the roots may be induced to take a horizontal direction as soon as they come in contact with it. The stones must be graduated from large to small in placing them, in order to act as sure drainage to the Vines.

As I profess to be still writing for beginners, I feel the necessity of familiarising the mind to the work. There must be a sufficient staple and fertility in the soil to carry the tree through a succession of years with health and fruitful vigour; and as a general description of soil in which to plant out-door Grapes, I think there are few parts of the country which could not present the following—I will not include the top spit from a pasture, or broken bones, as these would be generally difficult for a cottager to procure—one-third of turfy matter from the roadside, road-scrappings, and ditch-scurings; one-third of the natural soil of the garden; and one-third of charred wood, old mortar, plaster, and brick-rubbish from the size of a hen's egg downwards. The last observation as to size is also applicable to turfy matter. Do not let the compost be too fine, and if possible place a layer of the turf over the surface of the drainage, grass-side downwards, and ram it so firmly that the finer particles of soil will not pass into the drainage and choke it up.

The garden under my care is between two and three hundred years old, and twenty-two years ago I broke it up and replanted it. Part of my proceedings was as follows:—The first work done, as turf from a pasture was not to be obtained, was to dig off the top spit from the lawn and place it in a heap, and the next thing was to uproot pollard-like Apricot trees, Brown Beurré Pear, and other trees no longer capable of bearing fruit, and that were growing against the south-south-east front of the house, which good old Bishop Fell built. As before stated, this Oxfordshire stone dwelling is subjected almost continually to peculiarly cold currents of air, and boisterous winds beat upon it. Vines were thought of, ostensibly for their foliage, and were never expected to ripen fruit on so uncongenial a spot. In planting them, however, I adopted the method I thought most suitable, in order to coax them to do so, and the result is known. The Vines first planted did not prove true to name, but things came right at last.

I excavated the site the Vines were to occupy to the depth of 2 feet 6 inches along the side of the house, and to a width of 8 feet, allowing the bottom of the border, as I proceeded, to slope gently from the wall, and then formed a longitudinal drain at its lowest point, 6 inches deep, increasing to 1 foot deep, and emptying itself into a dumb well 5 feet deeper, and 4 feet in diameter, with sides built round with rough stone to prevent the soil falling in. This dry tank and the drain leading to it were then filled with stones, as also the bottom of the border—a plastic clay—to the depth of 6 inches, so that the smallest stones came uppermost; all were then forced firmly together with a heavy rammer, and completely covered with a layer of turf reversed, and that also was rammed firmly. I had not been idle beforehand in collecting material to fill up with. I charred the woodwork of an old summer-house, and every bushel of old mortar and brick rubbish that I could obtain duly found its way here. Bones were procured and broken with a road-stone hammer. I place my bone-tub in the coal house, of which, being constantly visited, rats fight shy. What old worn-out boots and shoes I could scrape together were chopped up upon a wooden block. In short, my Vine border was made to consist of two parts chopped turf from the lawn, two parts the top spit from the kitchen garden, one part charred rubbish, one part mortar and brick rubbish, half a part broken bones, and the chopped boots. The border was filled up with the mixture about 1 foot higher than the ground level, to allow for settling down, and so it remained during the winter.

I must here mention, that I have at two separate times widened the original border of 8 feet to 20 feet, the materials used in doing so being as nearly as possible in the same proportions as those previously used, and the new bottom of the border sloping to the drain.—UPWARDS AND ONWARDS.

(To be continued.)

SHOOTS OF FRUIT TREES DEFICIENT IN BUDS.

I ENCLOSE you a last-year's shoot off one of my Peach trees in my orchard house. You will observe that there is not a single bud of any kind at the axils of many of the leaves, and not a single wood bud on the whole branch. This is the case over the whole tree, not this year only, but every year it is the same with this particular tree, most of the shoots having no bud at all, either wood or bloom, except a terminal one. I shall feel obliged if your correspondents could give me any reason for this. The tree is treated exactly the same as all the rest of my trees, all of which, as a rule, bear very well. The tree has been quite free from aphids and red spider, except a little of the latter, which I am certain will not account for the peculiarity.

Again, my Noblesse Peach trees have rarely a wood bud upon them, except the terminal bud, my Rivers's Orange Nectarine the same; the latter blooms most profusely, but never sets more than four or five fruit, all the rest dropping off when about the size of a pea. No triple buds are produced on either of these trees. I have, in consequence, long straggling shoots with no possibility of keeping them within bounds, except by cutting down to the pot periodically.—A CONSTANT READER.

[We cannot account for the Peach tree making no wood buds, except on the supposition that it is too weak, and a freer cutting-in and allowing fewer shoots might effect a remedy. You must, however, have had some wood buds, or the tree would have died years ago. Noblesse Peach trees often make few wood buds, except the terminal one and a cluster of small ones near the base of the shoot. A good plan for giving these

small buds a fair start is to stop the fresh terminal shoot when it has made two or three joints, and as those near the base grow, thin them out to one or two shoots. When standards thus show almost budless shoots, as respects wood buds, the latter are often encouraged to break near the bottom when the shoot is bent a little.

In the case of the Orange Nectarine that so resembles the Noblesse Peach in this particular, we would recommend the same plan and richer feeding in summer, by manure water; and as the Nectarine flowers so freely, and the young fruit drop when of the size of peas, we would advise you strongly to cut away from one-half to two-thirds of the bloom buds as they open, leaving these that are best placed.]

NEW BOOK.

Les Fruits à cultiver: Leur description, Leur culture. Par M. FERDINAND JAMIN. Paris: Victor Masson et fils.

This is a thoroughly practical book written by a thoroughly practical man, and is, therefore, a safe guide to the culture of fruit trees in gardens. M. F. Jamin, himself a very extensive fruit-tree nurseryman near Paris, has, in addition to his own experience, every opportunity of becoming acquainted with and of studying the advantages and disadvantages of the various modes of culture which from time to time arise in the neighbourhood of that fruit-loving city.

In the work before us M. Jamin treats of every operation connected with the cultivation of all the kinds of hardy fruits, from the preparation of the soil and planting, through all the processes of pruning and training, to the stage when fruit is produced. We are then furnished with descriptions and observations upon the best varieties of each kind of fruit. The subject of dwarfing stocks for the Apple, which is at present creating a little excitement among us, is thus spoken of by M. Jamin in reference to the Doucin and the French Paradise (Pommier de Paradis):—

"Their origin is unknown to us, but we strongly suspect that they came to us from the north, for both appear constituted to live under unfavourable climates; never have we seen their roots suffer in contact with frost. Between these two varieties there exists a difference of vigour. The Doucin furnishes subjects of medium-sized growth, and is employed in preference for the pyramid, espalier, and wall-tree forms. It is also to this plant it is necessary to have recourse, when the soil is dry and burning, for cordons and goblets. The Paradise is less vigorous than the Doucin; it is the smallest form of Apple tree, and gives trees perfectly dwarf. We do not advise the attempt to cultivate it if the soil is too sandy or calcareous and destitute of freshness; notwithstanding all your good intentions your trouble will be lost. In strong soils, on the contrary, where clay predominates it succeeds wonderfully."

We commend this useful treatise to the attention of all fruit-cultivators.

THE LATE JAMES BACKHOUSE.

(From a Correspondent.)

LAST week in these pages was recorded the decease of JAMES BACKHOUSE, of York, senior partner of the firm of James Backhouse & Son, nurserymen and seedsmen, at his residence, Holgate House, near that city, on the 20th ult., in the 75th year of his age. James Backhouse's name was well known to a large circle, both in this and other lands, as a botanist and horticulturist. He was from his youth an ardent lover of nature, and a quick observer. As early as 1810 and 1811, when only sixteen or seventeen years of age, his botanical tastes were stimulated by the rich flora of Teesdale, a region then little known, but now, largely owing to James Backhouse's persevering researches, recognised as almost unequalled in this land in the wealth and beauty of its floral treasures. Mainly, it is believed, through the interesting discoveries made in that district, James Backhouse became introduced to the leading botanists of the day—the late Sir James Edward Smith, and Sir W. J. Hooker, and this acquaintance soon increased to a lifelong personal friendship.

Many and varied were the excursions in which for more than fifty years he was engaged in connection with his favourite pursuit, and his name will be associated with the discovery of not a few of the rarities of the British flora, the latest of these being *Viola arenaria* on the mountains of Teesdale, and the Killarney Fern, *Trichomanes radicans*, in Wales, in 1863. So lately as 1865, when within a few weeks of his seventy-first birthday, James Backhouse undertook a walk of eleven hours

upon the Welsh mountains, involving nearly 5000 feet of climbing; and though his steps were feeble, his energy and his interest in the wild scenery and alpine vegetation were keen as ever. In 1816 he commenced business in York, as a nurseryman, in partnership with his elder brother, who died in 1845, which occupation he followed, as far as health and other circumstances permitted, to the close of his life.

From his birth James Backhouse was a member of the Society of Friends, and as a minister of the Gospel in that Society he set out in 1831 on a long missionary journey to the Australian Colonies, the Mauritius, and Southern Africa. His labours as a Christian missionary were not confined to sect or station; and from all classes of every denomination in those regions he met with the greatest kindness and assistance in the prosecution of his object. In the same capacity, with the sanction and support of the Society to which he belonged, James Backhouse subsequently made extended missionary journeys in Norway, penetrating far within the Arctic Circle, into Lapland and Finmark.

His life was an eminently happy one. To help and benefit those around him, and to turn their attention to their eternal interests and the necessity of preparing for the life to come, as inseparable from true happiness in this life, was his constant aim and endeavour. His end was peaceful and truly "blessed."

NOTES FROM SOUTH AUSTRALIA.

(Continued from page 45.)

AFTER travelling about five miles we entered a tract of country presenting a singular appearance, every tree being dead, divested of its bark, and standing a whitened skeleton, without any scrub or undergrowth beneath. After passing through about five miles of this we came upon some beautiful undulating country—the grass 3 feet high—here commenced Stringy Bark, indicating the commencement of the rangy country. Large flocks of kangaroos bounded away as we approached, and as we entered the timber large flocks of pigeons moved off, to settle only again on the next tree. Here, also, we saw quantities of quail, and for the first time the lyre bird, or native pheasant. About a mile of this country brought us to Eagle Hawk Gully, a lovely spot, the scenery most charming. We stopped at this place and cooked our food, resting two hours, and rambling around the creek, whose sinuous banks presented a different view from every point. Here were the first Fern trees of any considerable size which we had seen since leaving Baylis Creek: although they were farther apart, they lent such a tropical appearance to the scene that we left the place with reluctance. The *Melaleucas* were the principal vegetation on the banks, although there are, doubtless, fine plants along this creek in November (spring). On leaving this spot we travelled four hours through a similar country, the timber increasing in size and height as we progressed, and at six in the evening we reached Gabie Town, or as it is termed Toon Gabbie; this we were informed is destined to become an important place, as the last township at which feed can be obtained for cattle. From this point northwards for several hundred miles, there are barren ranges inaccessible to wheeled vehicles, and all provisions are taken on pack horses. This Government township consisted of one iron store, one slab hut, and two bark huts. This was the nucleus of the important town to be. Here the timber is so thick that you cannot see for 30 yards in any direction, the Stringy Bark being 100 feet high, and from 5 to 6 feet in diameter at the base.

On March 2nd we left Toon Gabbie for Stringer's Creek, and here we commenced to ascend without any other road than the cattle track, with immense timber lying across it, now climbing 5 or 6 feet on to the trunk of a fallen tree surrounded and partially hidden by *Pteris*, till we entered on a track partly cleared. This, we were told, is a newly-commenced Government clearing, one chain wide, to Stringer's Creek. We followed this track till we arrived at The Springs—why so called I cannot tell, as there was no water except a little at the bottom of an old hole, which was so thick with mosquitoes and animalcula that we were compelled to take them and skin the water when boiling. Usually when the water is deep enough, by a gentle disturbance of the surface, the animalcula fall to the bottom, and the water can be dipped out free from the larger creatures. After dining we started, and at two miles made Flourbag Creek, one of the most romantic gullies we had yet seen. The banks are nearly perpendicular to a height of 300 feet, the bed of the creek, now dry, filled with tree Ferns, some prostrate,

some at various angles, with immense timber standing and lying in all directions, some immense trunks having apparently been in their present position for ages. Clematis and Tecoma *Latrobii*, rambling from tree to scrub, formed an impenetrable surface, the scent from which was overpowering. We here first saw *Adiantums*, *Scelopendriums*, and *Acacias* growing out of the stems of the tree Ferns, at a height of 20 feet from the ground. The seeds of the *Acacia* having lodged in the base of the fronds had germinated, and although we frequently saw this afterwards, we noticed that as soon as they had attained some size they died from want of nourishment, but while in a young state and but 5 or 6 feet in height they presented a singular appearance. We left this creek with reluctance, and after mounting the opposite bank we entered a new scrub, the native Musk (*Eurybia argophylla*), rising to a height of 30 feet and filling the atmosphere with its scent, making it quite oppressive and sickly. Here we saw many lyre birds, but very shy, they making off on our approach.

An hour or two of walking brought us to the Thompson River. This is a rapid river 100 feet wide, with banks about 300 feet high and very steep. Hither, just before our arrival, some miners had managed to bring, after months of toil, a portable engine, but in endeavouring to take it across the river by means of bullocks and two 6-inch ropes worked by crab-winchies, the momentum acquired in the first hundred feet of the descent was so great that the ropes snapped, and the engine and bullocks rolled into the river. How little people at home know of the energy and enterprise brought to bear in the remotest parts of this great country! The clouds lay in the valley, and from the tops of the hills the view was much the same as I have seen from Fendowrie, overlooking Brechin in Scotland, except that we wanted the cultivation. The river, we were informed, rises 40 feet in a few hours, the very hilly nature of the country gathering the water so rapidly. The timber at this spot was grand, consisting of large trees generally about 200 feet high, and principally Stringy Bark. They stand as thickly as possible, and are consequently straight, and usually from 4 to 5 feet in diameter. The heat and closeness of the atmosphere now made walking very oppressive, and suddenly, without warning, and before we could take down our tent from our backs and erect it, we were drenched with rain, of which there was a continuous downpouring, as though we were under a waterfall. The trees, although we stood against them as upright as we could, afforded no shelter, and in ten minutes ourselves and everything we possessed were literally saturated with water. After half an hour's exposure to this the rain ceased and the sun shone. The temperature being about 90°, the evaporation and closeness of the atmosphere were almost insupportable; but we walked on, as we could not make a fire, and came upon a hut, where we were kindly invited to stop for the night and dry ourselves and things. We remained here all the next day examining the country, visiting a reef which had been struck, and in which a good prospect of gold had been found. We were offered shares but declined, and the second day started for Stringer's Creek, a new "rush," a few miles north-east.

Immediately after leaving the hut we had to climb an almost perpendicular range of hills, about 600 feet in height, the worst we had yet encountered, the banks of the Thompson River being nothing in comparison. On taking a rest at the top we were overtaken by a resident of Stringer's Creek, who offered to show us a near cut through the bush to Stringer's; he conducted us by a small track off the road we were pursuing down a range far worse than that which we had ascended, for it was impossible to descend without holding by the saplings at every step, and it was equally impossible to stand without holding on. At intervals we obtained glimpses of the valley beneath us, but no description would convey an adequate idea of the views we thus obtained. Looking over trees 200 to 300 feet high, we saw that the gullies and ranges were literally covered with tree Ferns. The main valley was a mass of Ferns, their tops presenting a beautiful sight when looked down upon. In height they varied from 30 to 50 feet, gradually decreasing, as the tributary valleys rose into the hills, to 4 or 5 feet, and having heads from 18 to 20 feet in diameter. The spurs of the ranges were clothed with immense timber with an almost impenetrable undergrowth of saplings. The different views obtained surpassed anything we had beheld for boldness and tropical appearance. Arrived at the bottom a sharp turn in the creek brought us to Stringer's Creek settlement. Here, amidst all these difficulties, we discovered already two small portable engines and about two hundred people. All provisions had to

be brought either on the back or by pack-horses. Bread was not in the place, and flour very scarce, selling at £6 the 200-lb. bag, sugar 1s. per lb., and neither tea nor coffee to be had.

Stringer's Creek is a width of about 200 feet of alluvial ground, with banks rising abruptly for 400 feet on either side, and too steep to allow of buildings being erected upon them, so that these had all to be made on the level ground, the consequences of which if a flood should occur would be very serious. The miners were building for the winter huts, which were readily and comfortably made by felling the Fern trees, cutting off the heads at the required length, adzing the upper and lower sides square, and placing the stems one upon another. Very warm and neat-looking huts were thus formed, and with a covering of bark to sustain the snow, they would make excellent winter residences. We stayed two days at this place, examining the newly-discovered reefs and climbing the ranges, but except the tree Ferns, Stringy Bark, *Acacias*, various small Ferns, and *Sassafras*, the vegetation was very meagre. All timber, firewood, bark, or provisions had to be carried on the back, or drawn to the required place by a rope. We here made a sketch of the route we proposed to take, and had the descriptions and bearings laid down, and on the morning of the third day we started for Donnelly's Creek, after laying in a stock of such provisions as could be obtained.

On we travelled through ever-recurring scenery as described, always imagining it to be still more beautiful, until, after walking about four miles, we came to a creek, which for luxuriance and variety of foliage surpassed anything we had previously beheld. Tree Ferns were here near the creek as thick as possible, the sun never penetrating the banks of the creek, not less than 1000 feet high. A cascade of about 5 feet gave an additional charm to the scene, the water foaming and tumbling over. We could not resist the temptation of stopping to explore this creek; accordingly we went up it, possibly where no human being had been before, the *Tecomas*, *Clematises*, *Eurybias*, and *Sassafras* being so entwined as almost to be impenetrable. We were brought to a stop by a tree lying across the gully, and from its immense size we were induced to measure it. This monarch of the forest must have lain where we saw it for one or two hundred years, and had evidently fallen from a bush fire, as the position of the stump could be traced by rank vegetation and decaying charcoal, the creek having apparently stopped the fire. The portion of the tree crossing the creek was a mere shell, the interior having all rotted away. The outside was still firm for about a foot, and covered with Mosses and Ferns; the distance, apparently, from the butt being 100 feet, and the head of the tree extended far up the bank on the opposite side of the creek, but from the thickness of the scrub and undergrowth it could not be traced further. Having collected some seeds from *Pittosporum bicolor* and *acacioides* we returned to where we crossed, dined, and then prepared to ascend the steep bank—a most arduous task, having to pull ourselves up yard by yard by the saplings and undergrowth. Towards night we again arrived at a hut designated The Springs—why so misnamed we failed to discover, as not a drop of water was to be had.—JAMES DUNCAN, *Victoria*.

(To be continued.)

AN OLD FRIEND'S REMONSTRANCE.

THE JOURNAL OF HORTICULTURE has made me very unhappy lately. Where I live, in a box on a tool-house shelf, I hear our under gardener almost every week read out the answers in the Journal to people inquiring for a remedy for Oleander scale, aphid, American blight, or other insect or fungus plague; some new remedy or other is advised, while I am now scarcely ever mentioned. I was complaining aloud last week, when a hollow voice came from a rubbish corner and said—"I am an old, large Gishurst box; for nine years I have lain here forgotten, and thought to be empty. I am nearly used up, but have heard much in my long life; take my advice, and don't take to heart other preparations being be- praised and recommended. In my time I have known one after another come up, be much praised, and then forgotten. You were brought up on sound chemical principles. Insecticides may come, and insecticides may go, but you will always hold your own among the best gardeners. The worst I have ever heard said of us was, that we smell rather strong, and this was usually by those who did not follow the directions to dissolve forty-eight hours before use. I have longed to give this answer. Wise people do not choose medicine for being nice in

taste or sweet in smell, but for its efficacy. Our smell is the surest evidence that our sulphur is in a soluble state, and, therefore, more active than in mere mechanical mixture." I thought there was much reason in what the old box said, but that still I would send my troubles to the Journal.—GISHURST COMPOUND.

POMOLOGICAL GLEANINGS.

WE have received from Rev. C. P. Peach fruit of the *EASTERN BEURRÉ PEAR*, grown against a stone wall at Appleton-le-Street, in the North Riding of Yorkshire. We notice them here because of the excellence of their flavour and the tenderness of their flesh, as an indication of what may be done with this variety in such northerly situations as that mentioned. Mr. Peach says, "We began to eat them November 8th, and as it is now January 26th, it is a very long season for Pears off the same tree. The Pear is grafted on a Quince, and originally planted against a rough stone wall, which I found would not do to train to; so I have let the tree grow wild, and the top is now 8 feet higher than the low wall. The fruit was borne nearly equally all over it."

NOTES AND GLEANINGS.

DR. PERCEVAL WRIGHT has succeeded to the Professorship of Botany in the Dublin University.

—THE REV. M. J. BERKELEY is appointed Her Majesty's Commissioner at the INTERNATIONAL HORTICULTURAL EXHIBITION at HAMBURG.

—WE have received the prize schedule and rules of the Great Fruit and Flower Show of the CALEDONIAN HORTICULTURAL SOCIETY, to be held in Edinburgh on the 8th and 9th of September next. The prizes are numerous and liberal; and every variety, form, and colour of fruit imaginable will find a class wherein it may be exhibited. There are classes for fruits from foreign countries, and special prizes for France and Italy, Austria and Prussia, Germany, Holland and Belgium, United States, British North America, Turkey, and Egypt. Such a schedule will surely be an inducement which will draw together one of the finest displays of Fruits ever seen in this country.

—THE following prizes are offered for competition at the Fruit Committee of the ROYAL HORTICULTURAL SOCIETY, to be held on Tuesday the 16th inst., viz.—1, Dessert Apples, single dish, £1, 15s., 10s.; 2, Dessert Pears, single dish, £1, 15s., 10s.; 3, Dessert Apples, three dishes, £1 5s., 15s., 10s.; 4, Apples, six dishes of the best kept fruits, £1 5s., 15s., 10s.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first meeting of this Society during the present year was held at Burlington House on the 4th of January, Mr. W. H. Bates, the President, being in the chair. Amongst the donations to the library received since the last meeting were the publications of the Linnean, Royal, and Geneva Societies, and the "Entomologists' Annual" for the present year.

Mr. Frederick Bond exhibited a number of specimens of the common Tortoiseshell Butterfly, which had been reared during the past summer, and which were uniformly of very small size and darkly coloured—peculiarities owing, as was supposed, to the extreme heat and dryness of the season, which had parched the food-plants of the caterpillars, and accelerated the development of the insects, which had remained in the chrysalis state less than a week. He also exhibited a dark variety of the female of the Purple Emperor Butterfly. Mr. E. G. Meek exhibited specimens of *Dianthoea Barretti*, taken by Mr. Gregson in Ireland, and Mr. Boyd a specimen of *Crambus myellus*, captured at Blair Athol, being the second known British specimen.

Mr. T. Smith exhibited a very interesting series of the nests and cells of various Indian species of Bees, Wasps, and other Hymenoptera, collected by Mr. C. Horne, and presented by him to the British Museum. Drawings of many of these productions, and of the insects by which they were made, were also exhibited by Mr. C. Horne, who was present, and gave some details of the habits of the different species. Amongst these was a leaf-cutter Bee, which had formed its cells inside a terra cotta vase, having only a very small aperture; there were also the cells of the smallest species of Indian honey Bee, *Apis floralis*, the male of which had been regarded as a distinct species, and named *Apis lobata* by Mr. Smith. Mr. Horne likewise exhibited the cocoon of a large species of *Buprestis* (*Sternocera chrysis*), of which a number had been found in the earth at the foot of the tree in which the larvae had fed.

The Secretary exhibited some photographs of Wasps' nests, presented to the Society by Mr. John Hogg, and supposed to have been

built by *Vespa arborea*, Smith, and *V. britannica*, Leach. These nests had been described by Mr. Hogg in a paper read at the last meeting of the British Association at Norwich.

Mr. F. Smith read a memoir on the affinities of the curious genus *Sibyllina*, Westwood, which he had at first thought belonged to the family of the Ants, but which he now regarded as referable to the Ichneumonidae. Professor Westwood, in reply, defended its position as one of the Aenicta.

Mr. A. E. Eaton communicated a note on the structure of the ovipositor in winged insects, with reference to the recent investigations of M. Lacaze-Dathiers and Dr. Packard. Mr. Edward Saunders read descriptions of some new genera and species of exotic Buprestidae.

Professor Westwood exhibited a species of plant Bug, which he had received from Mr. Thwaites, of the Public Gardens at Paradise, in Ceylon, in which island the insect is very injurious to the Rice plantations. It appears to be identical with the *Leptocoris variicornis*, Fab.; also a small species of Ichneumonidae, the larva of which is externally parasitic on the surface of the body of a small spider in Ceylon. He also read descriptions of some new genera of exotic Coleoptera, of which he exhibited drawings and dissections.

GARDENING IN TOWNS.

LAST week I sent you an account of my practice in growing bulbs that bloom tolerably well in the City smoke. With your permission I will add a few more remarks in continuation of the subject.

GLADIOLUS.—The Gladiolus is very showy, and the bulbs, if taken up after they have bloomed and the stems have died away, will last for years. The bulbs should be dried and stored in dry cocoa-nut fibre refuse or sand, but before doing so the young offset bulbs should be taken off the sides. I plant early in February, as I have found that if planted in the autumn they are likely to rot before they commence growing. I dig a hole in the border about 9 inches deep, and fork up the bottom to give good drainage; then with a mixture of one-third rotten dung and two-thirds loam I fill in the hole, and with a trowel open the ground to the depth of 4 inches, and put at the bottom a little sand. I fill up with sand after the bulb has been planted, as this assists to drain off the wet and keeps away the worms. If planted in patches let the bulbs be 6 inches apart, and in the summer evenings supply them well with water. Arrange the colours according to taste. The varieties are very numerous, and any of them will grow in a smoky atmosphere.

THE ENGLISH AND SPANISH IRIS.—These do remarkably well, and are very pretty with their distinct stripes. They should be planted in October, from 4 to 5 inches deep, in sand, and will grow in any situation. If fresh earth can be obtained put a little round them; but they will do without it, and bloom freely.

JONQUILS.—Like the Iris these bloom very freely, and may be treated in the same manner. They are rather pretty, have a very sweet scent, and can be grown in almost any soil.

POLYANTHUS NARCISSUS should be treated in the same way as the Hyacinth. There are many sorts, and all are hardy, but the colours are few. For spring blooming they are very useful. Those I have are showing the buds already and are 3 inches high, but I am afraid of the frost.

LILIES.—All the hardy varieties I plant from October to January. The common *Lilium candidum* does best when planted early in the autumn, and soon commences to grow. It requires a little attention when 4 or 5 inches high; short sticks should then be placed round the stems for support and protection against the wind and those pests to gardeners, the cats. They are very brittle in the stem. *Lilium chalcidonicum* (Turk's-cap), *L. tigrinum* (Tiger), *L. martagon*, *L. aurantiacum* (Early Orange), and *L. bulbiferum* (Early Red), have all bloomed freely with me. Any mixture of soil will suit them, but the fresher and richer the better. They should be planted 5 inches deep in common sand, and when digging the borders be careful not to disturb the roots.

THE JAPAN LILIES.—This beautiful family of Lilies will bloom very freely in borders if not too much exposed to draughts. I plant them in November in 5-inch pots. If small bulbs, put three in a pot; if large, put only one. The compost should be three-sixths parts of rotten turf chopped up with a spade but not sifted, mixed with two-sixths leaf mould or peat, the remaining sixth being silver sand or good sharp common sand. Drain the pots well, and plant the bulbs halfway down the pot; then keep them in a cold frame without water, and on fine days give plenty of air. When sure of no more frost plant them out in the borders, putting a little of the same

compost as that used in potting round and below them. If they are drawn up much bury the stem, leaving 2 or 3 inches above the surface of the ground, as they root from the stem. If the weather is dry water them in the evening, and be particular to protect them by sticks from the winds and the cats. They will bloom freely and for a long time. When their blooming is over mark the places where they are planted with a label, and when taken up treat them in the same manner as the *Gladiolus*.—SAMUEL BROOME, *Temple Gardens*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

MAKE arrangements for the distribution of crops of vegetables with the view of preventing a similar tribe from occupying the same piece of ground during successive seasons. *Cauliflowers*, these must be planted out when the weather becomes warmer; where the ground will admit of it, it will be found a good practice in transplanting to throw out shallow trenches, placing the soil removed on the north side, and putting the plants in the trenches; they will thus be sheltered from the north winds. *Celery*, forward the plants for an early supply by pricking out on a slight hotbed, and sow on the same for a succession. *Broccoli*, clear off the dead plants, dig the ground, and prepare it for other crops. *Peas* and *Beans*, should the weather permit spade operations, a warm border or plot of ground may be prepared, and a favourable opportunity chosen for making a sowing of Early Frame Peas, or other early sorts. The *Mazagan* and Dwarf Cluster *Beans* should receive the same attention. See that those in the ground are not injured. *Sweet Basil*, sow in heat; as also *Tomatoes*, *Sweet Marjoram*, &c. *Horseradish*, plant, if not done, trench the ground deeply, and place the manure at the bottom of the trench. *Rhubarb* and *Sea-kale* for next year's forcing plant immediately in rich trenched soil, and throw a hillock of old tan, ashes, or sand round each crown to encourage it during the vicissitudes of the weather in February and March. Plant Box edgings where requisite, and thoroughly drain any portion of the garden which exhibits the least appearance of stagnant water. Wherever water is apt to stand on the surface through the puddling properties of heavy rains, try to improve the texture by a dressing of sand, ashes, lime rubbish, charcoal dust, &c.

FRUIT GARDEN.

In the orchard let all planting be finished as soon as possible, and stake and mulch. Remember to drain thoroughly. Nowhere is this advice more necessary than in the orchard. Although Apples and Pears like adhesive soils, they will never prove profitable where water is allowed to accumulate. Examine all old or overborne trees; many trees of this character may soon be renovated by applying manure to the extremities of their roots, as also by good top-dressings, which should be applied early in autumn. Pruning and nailing must be continued unremittingly. Attend to the earliest trees first. Planting, where an unfavourable situation has compelled its postponement, should be no longer delayed.

FLOWER GARDEN.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller to render the turf smooth and solid. If any alterations still remain unfinished, every available hand should be concentrated on this work, so as to have it completed as soon as possible while the weather is favourable for such work. Last year's seedling *Polyanthuses* will now begin to throw up occasional trusses of bloom. Those which have pin eyes are usually discarded, but I would advise persons who are fond of artificial fertilisation to save any flowers which may have first-rate properties, even if they are thus worthless in a horticultural point of view, by the protrusion of the stigma, as from the facility with which it may be acted upon a more successful result is likely to be obtained from them than from others not so constituted. The bee seldom or never settles upon the *Polyanthus*, and from the position of the anthers and stigma in a perfect thrum-eyed flower, the former are difficult to remove without either injuring the latter or fecundating it with the flower's own pollen, which is not desirable. I trust my readers will cross a pin-eyed flower of perfect lace and form (hundreds of which have been thrown away), with such flowers as Buck's George IV., or Pearson's Alexander, and communicate the results of their experiments, for it is by no means probable that all the progeny will be pin-eyed. Cover Auriculas at night with mats, and as the plants are now beginning to grow, a little more water may be given

than common, taking care not to water over the plants. *Tulips* are rapidly appearing above the ground; protect them as much as possible overhead, allowing a free circulation of air. *Carnations* and *Picotees* will soon be ready to remove, harden them as much as possible, and give these also a little more water, but not over the foliage.

GREENHOUSE AND CONSERVATORY.

The proper application of soils is no unimportant part of the gardener's practice. Rules can scarcely be offered to embrace every circumstance relating to a just application of soils, and the advice I would give is, to collect at the present season a sufficient store of the various sorts of soil. Loam, peat, and vegetable mould should be stacked a year at least in the compost-yard before being used for potting. I have seen plants greatly injured by being potted in fresh-cut soil. Push on *Azaleas* with a warm moist atmosphere; for decorative purposes at this period of the year few plants are more useful. *Epacris* are also valuable plants for winter, and by starting them into growth early, and having their wood well ripened, they may be had in full blossom in November. Of *Amaryllids* and *Dielytra spectabilis* there should likewise be a good supply; both may be had in bloom early in the season, and under good treatment they last long in beauty. Continue to repot such hardwooded greenhouse plants as require it, so as to afford them every chance to make vigorous growth.

FORCING PIT.

In this pit keep the bottom heat up to 80°, and allow the atmospheric heat to rise to 80° likewise for a couple of hours on sunny afternoons, with occasionally a slight syringing at such periods. If the pit has a hot-water pipe or flue in it, great pains must be taken to secure moisture in the air, without plenty of which many plants must prove failures. If there are two pipes, a flow and return, as is generally the case, the bottom pipe should rest in a cemented trough deep enough to enable the water to cover the pipe when necessary, and from 6 to 9 inches wide. Water, less or more, should at all times be kept in the trough, at least after this period.

PITS AND FRAMES.

A calculation should be immediately made as to how far the plants in these structures will go towards supplying the masses in the pleasure ground; damp and frost will have, doubtless, reduced the number of some kinds. Strong plants, or pots of "stores" which became well-established in autumn, and which consist of *Verbenas*, *Fuchsias*, *Petunias*, *Heliotropes*, *Salvias*, *Calceolarias*, &c., should be removed forthwith to some of the houses or pits at work, to enjoy, if possible, a moderate bottom heat, watering them with liquid manure. These will quickly furnish an abundance of early cuttings, which should be slipped off and propagated at once. Water sparingly here at present, not using any if the plants continue healthy without it.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE frost continued long enough to enable us to do much wheeling, with the very least of cleaning-up afterwards, but it disappeared too soon to enable us to proceed with much that was contemplated. With mild weather since and some heavy downpourings, the ground has become far too wet for general work, though not too wet for transplanting trees and shrubs. Sloppy and uncomfortable though working on the surface now is, we have been surprised to find that with us the heavy rains have not penetrated so far into the ground as we expected. In making holes for planting, and trenches for draining and laying pipes, we often found the soil 2 feet from the surface almost as dry as it was last midsummer. We were indulging in the hope that if the next summer should be dry and warm we should not be badly off for water, as what had so liberally fallen this winter would partly find its way upwards again when the heat was applied to the surface, but we are now less sanguine on this point. We recently saw a trench made in a flat meadow where there was no drainage to take off the heavy rains that fell upon it, and 16 inches from the surface the soil was crumbling and dry. No doubt it was greatly dried last summer before the rains came in the autumn. If this state of the under soil should prove at all general, there will be some, like ourselves, who may have to regret that more means were not adopted to save up part of the water that fell so freely on the surface. We could have filled three times our space of reservoirs if we had had them.

Frost and Ice.—We should be glad if anyone would fully explain some of the peculiarities of the late frost, which at 5 feet from the ground on the morning of the 26th was 10° below the freezing point, and with a wind which for five days had scarcely moved from south to slightly south-east, and that morning to the south-west, somewhat premonitory of the change which so soon came. The warm quarter of the wind was not so singular as that in this neighbourhood, for the four or five days of the frost's continuance, the sky was so overcast, foggy, and cloudy that we scarcely saw the sun by day, or the stars by night. The frost, then, which for a couple of days or so was rather sharp, could have been little influenced by the free radiation of heat from the earth, as the dense clouds would, like a thick interposing blanket, have arrested that radiation; and so far and so singularly was this the case, that though roads and soil were hard, so that we could scarcely drive a spade into previously-turned-up ridges on the 25th, grass and even wood-work, &c., were quite free from the deposition of hoar frost—so green, in fact, did the grass look, that we could not believe there was any frost in the morning, until our feet sounded on the hard-frozen paths. We presume many would tell us that this was a black wind frost, and, of course, we are well aware that changes from heat to cold, as well as other changes, extend to great distances in the atmosphere, and that these changes will manifest themselves in places where there will be little perceptible in the localities to account for them. If we would, we cannot isolate ourselves; we must be bound up and influenced by the world of matter and mind in which we live. The frosts and snows of the north tell upon our atmosphere farther south. We knew that there had been severe cold in the north, and expected to be influenced by it; but we scarcely expected such sharp frost for a short time with the warm south wind driving the cold back from us, and all the ordinary processes of cooling by free radiation almost entirely intercepted. True, the soil was wet on the surface, and, therefore, more easily frozen than when dry, but if there had been free radiation the moisture on grass, &c., would have been frozen first, and we should have had hoar frost instead of its almost complete absence. To young gardeners the matter is important, as much of success in working depends on seeing clearly the rationale of performing our simplest operations. When the stars and moon shine unclouded in a winter's night, and more especially if the wind blows from the north or the east, we look sharper to our houses and our protecting material, as in such cases there is a free radiation of heat from the earth and all that stands upon it, and therefore the surface, and the dampest surface, will be the coldest. But if we had not studied our own sensations, noticed the freezing ground, and taken the trouble to look at our thermometers (a very simple precaution), but which, like all simple precautions, is frequently neglected), we might have depended on the thick clouds, or the dense fog, as sufficient protection for our tender plants from any attacks of frost, until we were rudely awakened by the demonstrated results in the morning.

Turned over ridged-up soil whilst the frost lasted, and when we could we turned over ground previously ridged-up, not because we like turning down frozen soil deeply, but the merely turning the ridges over did not place the soil beyond the reach of the next thaw, and because of all sweeteners and pulverisers we think that a sharp frost is the best and cheapest.

Influence of Frost on Snails and Slugs, &c.—How often have we heard it said, "Won't this settle the slugs, snails, grubs, and all these pests?" Now, it is unpleasant to disturb such a belief, but we fear that facts and proofs do not bear out such a desirable result. These annoying visitors may be caught napping at or near the surface of the soil, and be frozen in a sudden frost. Our own observation would lead us to conclude that their instinctive knowledge makes them more weather-wise than even shepherds and meteorologists. We have seen them in a mild afternoon, but we never discovered their frozen bodies in a sudden sharp frost, either on the surface or a little below it. On fields of young Wheat we have seen myriads of the shmy fraternity destroying the young plants, and we have seen their ravages lessened by liming, sooting, and trapping, and by heavy rolling when the surface was dry, so as to crush them; but we never saw one alive or dead in sharp frost, even though it came very suddenly. Perhaps the greatest difficulty we ever had with frost was in the last days of 1860 and the first days of 1861, when the thermometer ranged about zero; and that which makes us recollect it so well was owing to the giving way of a boiler, and our consequently having to stand on a lofty glass roof the most of the bitter night, whilst others

swept a light fall of snow, and carried it up in baskets to throw over the roof to prevent the air becoming so cold within. With a good fall of snow, or even with plenty on the ground to shovel and carry up, it would have been but a trifling affair. Ever since, we have kept a little rough hay in reserve every winter, as in an emergency that would lie much better than straw or long litter, and canvas, mata, &c., cannot always be had. Well, with but little snow to protect the earth, and the frost so severe as to kill Laurels and many of the most approved species of the Pine tribe, that had shown themselves hardy in previous winters, it is a fact, so far as we are concerned, that of all summers, the summer of 1861 was that in which we were the most troubled with snails and slugs. Since then we have depended more on catching and killing them than upon winter's frost.

FRUIT GARDEN.

If the stems of fruit trees become covered with moss and lichen, the scraping these off with a little of the scaly bark, and then washing the trees over with quicklime wash, will help them to renew their youth. Even the limewashing itself will do them good. In old gardens, where the walls are mossy as well as the trees, a good washing with strong lime water or wash would be advantageous; but the best, if the wall is sound, is to wash or syringe with salt water in November, as all the saline matter will be gone long before spring, and the most of the mossy growth will be gone with it. If the old walls, whether of stone or brick, are decaying and mouldering away, it will scarcely be safe to use the salt water, as that, whilst it remains saline, will hasten the decay and cause stone and brick to crumble away faster. On hard flagstones we have used salt and potash for cleaning them with good effect and without doing any harm, but on soft stone a month or two would elapse before the effects would be gone. Stone, except the hardest, would soon be eaten away with saline applications.

Birds, owing to the mild weather, have not been so troublesome as usual with fruit trees and bushes, but they must be looked to as the buds begin to swell. For bushes nothing that we have tried is better than drawing them close together like a faggot, and then syringing them over with limewash. An old syringe will enable a man to whiten a great many very quickly.

In-doors in the orchard houses, not finding time to repot, we have carefully taken away a couple of inches or so of the surface soil and top-dressed, placing, as stated last week, a rim of turf 3 or 4 inches above the rim of the pot. Zinc rims are better for this purpose for amateurs who do their own work. Though we should have preferred shifting a number of our fruit trees, it is doubtful how long a tree may be kept healthy in the same pot with the help of this top-dressing, and manure-waterings when growth has freely set in. The pots, being partly plunged, had previously all been raised, so as to break any roots that had run through—a very simple and effectual mode of root-pruning—and some handfuls of good rich soil were placed in the bottom of the hole before the pot was replaced. We have some rather large Tom Thumb Pelargoniums that, though increasing hardly anything in size, seem as yet to bloom better and better every year; and these plants must have now been about twenty years in the same pots, and have never been taken out of them.

Transplanting Trees.—The high winds that have come and may yet be expected, render it very desirable that all fresh-planted trees should be well secured by firming the surface, staking, &c. When a fresh-planted tree is driven about, so as to leave a hole near the collar, the roots are apt to suffer much in consequence. A little extra care in this respect, and laying out and packing the roots in layers, are anything but time and labour lost. This additional care is more necessary when rather large trees are transplanted, and the work should be finished as it proceeds, leaving nothing to be done on a future day.

We recollect a case in point. A number of fine trees were to be moved, and the order of the day was that all were to be moved, and placed in their fresh positions in one day, so as to have the roots covered, and the work finished afterwards. To get this done, men who knew nothing of the work had to be pressed into the service. The work, however, was done, and gave satisfaction to those more especially concerned. More time and delay in doing the work were urged, but without effect. Done properly, we should have been disappointed if one in twenty such trees had failed. Done as they were, we should have been surprised if the half of them had lived. Unfortunately that same night a severe frost set in, and the thorough replacing of the soil over the roots could not be accomplished

for a week. As it was, hardly a sixth part survived the following summer. It requires some experience to accept the simple fact, that the roots of hardy trees are greatly injured when exposed to frost, or even to drying winds. The trees referred to, and for the purpose contemplated, were worth a large sum of money, and that was almost entirely sacrificed to obtain a first economy in time and labour.

When much transplanting is to be done it is well to have one good man at least at the taking-up, so as to do justice to the roots, and one man who knows or can be taught the spreading-out and packing the roots in layers. The trees should be taken up no faster than they can be planted, and the planting and staking of one tree should be finished before the next is proceeded with. The thorough finishing, so as to make a sort of basin round each tree, is the only thing that can with propriety be left to a future occasion.

When rather large trees come from a considerable distance the roots should be mulched, and kept from the air, and especially a frosty air. Some time ago we saw fine young trees fully 20 feet in height passing along the highway on a waggon, the trees tied down with ropes, and the roots showing signs of frequent transplanting in their nursery quarters, but exposed back and front of the waggon to a frosty wind. Properly treated there was no apparent reason why such trees should not have lived through the first summer, and gone freely on in vigorous growth in the second summer. Curiosity led us to inquire into the future condition of these trees, and we were not surprised to learn that the first July after planting found scarcely one in ten alive. We shall not have mentioned this fact in vain if the senders-out and the purchasers of trees see the importance of protecting the roots. Some time ago we walked through a nursery in a keen frosty morning, and noticed some scores of fine trees of Chestnut, Lime, and Poplar, averaging about 20 feet in height, with fine roots, carefully taken up, but with these roots freely exposed to the dry air then, and the severe frost of the previous week. Now these trees we could not trace; but intended as they were to produce an effect at once, it would not have surprised us if two-thirds of them had died the first summer.

A little sun would do great good in all places where heat is used, and especially in Peach houses, where the bloom, as in ours, is just opening. This house we keep about 50° at night, rather under than over, and allow a good rise during the day, with sunshine if it comes, and a little air given early. Drew a feather and a dry hand over Strawberries in bloom. Sowed Melon seed in the Cucumber frame, where the Cucumbers in our quickly-put-together bed are doing well, the freshness of the dung used being neutralised by the foot of hot leaves that cover it. The temperature, with covering-up at night, averages 65°; in dull days it is scarcely so high during the day, but in sunshine it mounts to 70° and upwards, and before that we give a little air.

Scarcely a morning passes that we do not trap rats or mice, and yet we dare not sow a Melon seed without putting a square of glass over the pot, and a weight on the glass to prevent even the mice moving it aside.

ORNAMENTAL DEPARTMENT.

Two things we will just allude to. First, in connection with giving air to all plant houses, in fine days make sure that the plants are not dry, but avoid spilling an extra drop of water. The air of the houses, unless where a high temperature is used, will be quite damp enough in this mild weather without slopping water about. In dry, frosty weather it might be necessary to damp the stages and paths a little.

Secondly, as to *bulbs* of all kinds that stand almost any treatment. Let your friends see that you know something of vegetable development by giving them the lightest place in your rooms. When these can be obtained early there is no difficulty in having them early in bloom. The great point is to have the pot filled with roots before the flower stems begin to rise. We have had Hyacinths moderately early, though we did not get the bulbs until the dark days, by giving the pots heat and keeping the tops of the Hyacinths cool until the pots were filled with roots. After that, when fine healthy growth is required, nothing is better for forwarding for rooms and greenhouses than a dung-bed frame, such as a Cucumber box, partly plunging the pot, and raising it on the surface as soon as the first florets expand, as preparatory to moving it where the atmosphere will be drier. Before Christmas, and a little afterwards, some strong flower stems seem unwilling to rise, and there would not be room for the florets to expand, as they would do when the stem rises 3 or 4 inches before the florets expand,

as after that the stem rises freely to give room for each floret to show itself. To counteract this dumpy tendency we have found nothing better than a funnel of thin paper placed over the bulb, which, by the enclosed heat, prompts the stem to rise freely. When glasses are preferred in rooms it is no bad plan to grow in pots, and when a few florets have expanded to turn the plant out of the pot, and in a pail of water at 80° wash away carefully the soil from the roots, then set the roots carefully in the glass, and give fresh heated water every second day. For children to watch the processes of root-making, clear glasses are best; for the good of the bulbs and as looking better, we prefer glasses tinted purple or dark green.—R. F.

TRADE CATALOGUES RECEIVED.

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds.*
S. Dixon & Co., 48A, Moorgate Street, London, E.C.—*Select List of Vegetable and Flower Seeds.*

Stuart & Mein, Kelso.—*General Catalogue of Vegetable and Flower Seeds.*

London and Continental Seed Company, 68, Welbeck Street, Cavendish Square, London, W.—*Catalogue of Seeds for the Farm and the Garden.*—*Catalogue of Seeds for the Flower Garden.*

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

Thomas Bunyard & Sons, Maidstone and Ashford, Kent.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

COVENT GARDEN MARKET.—FEBRUARY 3.

WE have ample supplies of both home-grown and foreign produce, and there is no alteration from last week that is worthy of notice.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	to	2	Melons.....each	2	0	to	5
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	6	0
Chestnuts.....bush.	10	0	16	0	Peaches doz.	0	0	0	0
Currents..... ½ sieve	0	0	0	0	Pears (dessert) . doz.	2	6	6	0
Black.....doz.	0	0	0	0	Pine Apples.....lb.	6	0	8	0
Figs.....doz.	0	0	0	0	Plums ½ sieve	0	0	0	0
Filberts.....lb.	0	9	1	0	Quinces.....doz.	0	9	1	6
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries..... quart	0	0	0	0	Strawberries.....lb.	0	6	0	0
Grapes,Hothouse..lb.	6	0	8	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes doz.	3	0	to	6	0	Leeks bunch	0	4	to 6	0
Asparagus 100	5	0	8	0	Lettuce score	2	0	4	0	
Beans, Kidney hd.	2	0	3	0	Mushrooms pottle	1	0	1	6	
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	3	
Broccoli bundle	1	0	2	0	Onions bushel	6	0	8	0	
Brus. Sprouts ½ sieve	2	0	0	0	Parsley sieve	3	0	4	0	
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0	
Capiscums 100	6	0	0	0	Peas quart	0	0	0	6	
Carrots bunch	0	4	0	8	Potatoes bushel	4	6	6	0	
Cauliflower doz.	2	6	4	0	Kidney do.	4	0	7	0	
Celery bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0	
Cucumbers each	2	0	4	0	Rhubarb bundle	0	9	1	0	
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0	
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	6	
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0	
Herbs bunch	0	3	0	0	Tomatoes doz.	1	6	2	0	
Horseradish bundle	3	0	5	0	Turnips bunch	0	6	0	0	

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*Constant Reader*).—"The Floral Magazine" contains coloured portraits of new flowers, but nothing about their culture. "The Florist

and Pomologist" contains one coloured portrait and miscellaneous cultural information. (J. P., Coventry).—Pearson on "Orchard Houses," and "Cottage Gardeners' Dictionary." You can have them free by post from our office if you enclose 8s. 6d. with your address.

SEEDS (James, Leominster).—We cannot recommend tradesmen. Write to any of the principal seedsmen who advertise in our Journal.

ANTI-CORROSIVE PAINT (Pinxo).—We hear that it is to be depended upon. If we asked the questions you put there would be some replies not to be relied upon.

GRASS UNDER FILBERT TREES (H. H.).—Sow the Sweet-scented Vernal Grass, *Anthoxanthum odoratum*.

PEARS FOR WEST WALL IN A COLD SITUATION (V. Lisburn).—As you require the fruit to be ripe at the beginning of the year, *Beurré de Rance*, *Josephine de Malines*, *Knight's Monarch*, *Bergamotte Esperen*, and *Prince Albert*.

STEPHANOTIS FLORIBUNDA CULTURE (Ignoramus).—The soil should be kept dry in winter, but not so dry as to affect the foliage, which must not be allowed to shrivel. It should have a light and airy situation, and a temperature of 55° from fire heat at night, and of 60° to 65° by day.

IKORA COCCINEA COMPOST (Idem).—It succeeds admirably in a compost of three parts sandy fibrous peat and one part turfy loam, with the addition of about one-sixth part of the whole of charcoal, in pieces from the size of a pea up to that of a hazel nut, and a like quantity of silver sand. All these should be well incorporated. The peat and loam ought to be torn in pieces with the hand and made rather fine, but not sifted. Good drainage should be provided.

CYCLAMEN NAMING (Idem).—We could name for you the different species of *Cyclamens*, but not varieties of *C. persicum*, which are too numerous. Flowers and leaves are necessary to be sent for identification.

PRUNING STANDARD ROSES (S. Sampson).—The proper time to prune standard Hybrid Perpetual Roses is from the middle of February to the first week in March; but the sooner it is done after the middle of February the better, if the weather is suitable. On no account prune them when the shoots are frozen, nor during frosty weather.

RHODODENDRONS IN LIMESTONE SOIL (Y. Z.).—*Rhododendrons* will not succeed in limestone soil. Your only plan will be to take out the soil 18 inches deep, or better 3 feet, and replace it with proper peat soil. This being done, we think they would succeed admirably if manured well with cow dung, which should be given as a top-dressing when they are commencing to form fresh growths, placing it about an inch thick, and supplementing it with a good watering. We think it unnecessary to plunge the pots, or to have them in pots. We would plant them out, taking care, by proper drainage, to prevent water lodging in the subsoil.

MUSA CAENDISHII IN CONSERVATORY (J. S.).—The *Musa Cavendishii* would not succeed in a conservatory having a temperature in winter of 40° from fire heat. To grow it well the temperature should not be less than from 50° to 55° at night at this season. We should not advise its being grown in a conservatory so cool as yours appears to be, and which is much too cold for this handsome-folaged and desirable fruit-bearing plant. It requires a stove.

EVERGREEN TREE FOR SHELTER TO ORCHARD (Firs).—You could not have any better tree than the Austrian Pine, which is a rapid grower, and better in every way than the Norway Spruce. We would plant alternate lines of Austrian Pine and Hemlock Spruce, placing on the outside a line of English Yew and common Holly, then the Austrian Pine in the next line, and have the third line Hemlock Spruce and Corsican Pine, every alternate plant being Hemlock Spruce; then the Austrian Pine, and the Corsican Pine and Hemlock Spruce as before, and so on to the back. This will ultimately give you better shelter, and be more diversified.

IKORA COCCINEA LEAVES SCORCHED (H. D.).—The leaf sent us appears to have been destroyed by water being allowed to stand upon it, which would be the case when grown in a propagating pit, from the condensed moisture. Afford a drier atmosphere, and give the plant the benefit of bottom heat.

OLDENLANDIA DEPPIANA (Idem).—It is a stove evergreen, propagated in April by half-ripened cuttings, in sand, under a glass, with bottom heat. Equal parts sandy loam and peat suit it.

CYCLAMEN PERSICUM CORNS NOT GROWING (Longmynd).—We would place the pots in the greenhouse of your friend, on a shelf near the glass, keeping the soil moist but not very wet, and there let them remain until the beginning of June, and then place them outside in a warm situation, but shaded from the midday sun (10 A.M. to 3 P.M.), plunging the pots to the rim in coal ashes. The foliage, if any, should not be allowed to flag from want of water when placed out of doors, nor when the foliage begins to decay ought the soil to be allowed to become very dry. It is likely, however, your corns will not begin to grow until next autumn.

MELON CULTURE (A Young Beginner).—Trentham Hybrid and Golden Ball are good Melons, but we prefer Malvern Hall and Beechwood, the former a scarlet and the latter a green-fleshed. One plant will be sufficient to put under each light, or two plants for a pit 6 feet by 4 feet. The pits will, no doubt, answer very well for Melons. You will find full particulars as to Melon cultivation in former volumes.

EPHYLLUM THUNICATUM—ERRATA.—"Had I said, 'keep cool and dry after blooming in winter,' I should have, perhaps, been more intelligible. 'Winter' would seem to be an indefinite term, yet I had plants which had bloomed and were being kept cool and dry on the 25th ult., when the thermometer registered 17° of frost, and I call that winter. In the paper which I contributed last week, 'First Crop' Pea is made to appear as a wrinkled variety. In the fifth line from the top of the second column, on page 62, the period which appears after the word 'varieties,' should have been placed in the preceding line after the word 'earliest.'—J. W."

SEA-KALE BEET (T.).—We do not know the variety you name. We presume that it is one of the forms of the common White Beet; the leaf-stalks are the parts boiled and eaten. We never tasted any as tender as Sea-kale.

FUNGUS (J. G.).—It is the common Mushroom, *Agaricus campestris*, and, consequently, eatable.

ROSES (E. W.).—The party you name does not part with them upon any terms.

MANURE WATER FOR AZALEAS (Julia).—It is not usual to give Azaleas liquid manure, and we do not advise it; though weak guano water, 1 oz. to the gallon of water, or better, 1 peck of cow dung to thirty gallons of water, might occasionally be used.

TREE-TRANSPLANTING MACHINE (An Old Subscriber).—There is a great diversity of opinion on the subject, and each has his particular favourite. We consider Mr. Barron's a very good tree-lifter.

ANNUALS FOR BLOOMING IN FRAMES IN AUTUMN (A Subscriber).—*Clintonia elegans*, *Lobelia erinus* Miss Murphy and *L. erinus speciosa*, *Marigold* (French), *Miniature brown* and yellow; *Mesembryanthemum gisburni*, *M. tricolor*, and *M. tricolor album*; *Phlox Drummondii* varieties, *Portulaca Thelloussi*; and to these may be added the dwarf *Asters* and dwarf German Ten-Week Stocks. There are few that would do well at the time you name—from September to November, and to bloom when they ought not to be sown until May.

SHOWY LARGE-FLOWERING CHRYSANTHEMUMS (Idem).—Christine, Golden Christine, Mrs. George Rundle, Alma, Dr. Sharpe, and Prince of Wales; and of the Japanese varieties *The Daimio*, *Red Dragon*, and *The Wizard*, are very showy.

WINTER ACONITE IN POTS NOT FLOWERING (Akbar).—The plants not flowering this year is due to their being taken up and potted last year, which removal would deprive them of roots, and their being in doors for a time only is unfavourable to their maturing the growth properly. The best plan is to take up good clumps every year from the open ground, pot them, and after flowering replant them in the open ground; in a year or two they will recover and flower freely again.

COMPOST FOR CACTI AND KALOSANTHES (A. E.).—The *Cactus* tribe succeed in a compost of two-thirds sandy fibrous loam, and one-third rubbish or broken soft bricks, charcoal in pieces from the size of a pea up to that of a hazel nut, and silver sand, equal parts of each. To that may be added for the strong-growing sorts, one-fourth old cow dung. For the *Kalosanthes* two parts turfy loam in pieces not larger than a hazel nut, torn in pieces with the hand, one part leaf mould or old cow dung, and one part charcoal in pieces from the size of a pea up to that of a hazel nut, broken bricks or pots, and silver sand in equal proportions, the whole being well mixed together. The pots should be well drained.

GENETILLIS TULIPIFERA STRAEOGLINO (Idem).—Your best plan would be before it begins to grow to cut it rather closely in, and yet leave sufficient rather young growths to insure a good supply of fresh shoots, and these you may stop during the summer so as to produce a compact and handsome plant.

ESTABLISHING A ROOKERY (An Old Subscriber).—We have known rooks induced to build by taking nests from the trees in an old rookery, and putting them in the forks of the top branches of the trees in which it is desired the rooks should build. Another good plan is to take a few nests when the young rooks are about half-begged, taking nests as well as young, and put them in the trees. Make them secure against winds. The old rooks will follow and feed their young in most instances, but we have known cases of abandonment. A third plan is to bring up a few young ones by hand, and let them loose after they are able to provide for themselves.

POTTING ACHIMENES AND GLOXINIAS (R. H.).—*Achimenes* should be fresh potted before they are started, placing them rather thickly in seed pans, and when they come up and are about an inch high, take them up carefully and transfer to the blooming pots or pans. *Gloxinias* should be shaken out of the soil and placed in pots about twice the diameter of the bulbs, being careful not to overwater, but yet keep the soil moist until the plants begin to grow. When the pots are full of roots shift into the blooming pots. In reply to your other query, we may state that glue is employed by bookbinders.

PLANT FOR SOUTH WALL (J. Smith).—*Escallonia macrantha*, *E. montevideensis*, and *Berberidopsis corallina* are fine evergreens for a south aspect. *Bridgesia spicata* is also good, and few are finer than *Wistaria sinensis*. Any of the above will suit you. They can be obtained through any of the nurserymen who advertise in our columns, but we cannot name any one in particular.

BURNING CLAY FOR WALKS (C. C.).—Thanks for your notes. You say "it must be well burnt;" please to detail your mode of burning.

FORCING IN A VINERY (James Douglas).—A grapery started on the 1st of February will yield ripe Hamburgs in the end of June and the beginning of July. Begin at 45°, raise the temperature in a week to 50°, and increase it gradually to 60° in three weeks, not exceeding that until the buds break. Kidney Beans put in such a house at the same time will be in gathering about the beginning of April, as they will make little progress until the heat rises to about 60°. Strawberries put in at the same time will come in from the middle to the end of April, earlier if there is much sun and the pots are crammed with roots. We presume the *Iresine* will succeed sown in February or March, like *Perilla*, though we have not so tried it much—in fact, have depended on cuttings. It is well not to plant until June.

PLANTS IN OFFICE WINDOW (J. P.).—So far from a pad of water injuring your health it allowed to evaporate in the air of your office, it will be sanitary. Your plants would thrive all the better if enclosed in glass, which is often done by a kind of glazed case with a door in it, the window glass forming its front.

RAFTERS FOR GREENHOUSE (Amateur, Sheffield).—We presume you mean by 12-inch glass, 12 inches wide from one rafter sash-bar to another. In that case the rafters would require to be 8½ inches deep, and 14 inch wide. This would be quite sufficient if you run an iron rod or bar from end to end of the roof, and fastened it to the middle of the 15-foot-long rafter. In a 60-foot length there should be four or five columns to support this bar. We think the bar itself is good for keeping the rafters securely in their places, so as to prevent all bulging. Ventilate at the sides and apex.

PLANTING AN ORCHARD HOUSE (Y. Z.).—If you wish for great variety, feel a pleasure in attending much to the trees yourself, and do not grudge the greater labour in watering, &c., then have a part at least of your trees in pots. If you want large crops with less labour, and trees on the whole as interesting, plant them to cover a trellis in the usual way. You may indulge both plans at first, if you plant young trees intended to be permanent, as it will take some time before they fill the house. If the house is a lean-to, a good plan is to cover the back wall and have a trellis

or trees in pots in front. In a span-roofed house, with trees planted on each side, a fine promenade may be made by having a path down the centre. Such a walk will be more shady and pleasant in summer than you could well have by trees in pots.

COLCHIAN LAUREL (*S. W. K.*).—It is only a variety of the common

Laurel, or, as written in botanical volumes, *Cornus laurocerasus*, var. *colchica*. It was introduced into England from Belgium in 1811.

NAMES OF PLANTS (*C. M.*).—We cannot undertake to identify plants by their leaves only. (*Mr. Gough, Clonmel*.—*Oncidium crispum*. (*R. H.*).—1, *Asplenium adiantum-nigrum*; 2, *Ceterach officinarum*.)

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 2nd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 27	29.682	29.379	45	34	40	39	S.	.09	Clear and frosty; fine, slightly overcast; densely overcast.
Thurs. 28	29.271	29.008	55	42	43	40	S.W.	.53	Cloudy; very fine and mild; heavy rain at night.
Fri... 29	29.138	28.955	62	38	46	41	S.W.	.26	Densely overcast; boisterous with rain; heavy rain.
Sat... 30	29.441	29.010	55	40	45	42	S.W.	.12	Rain; boisterous and stormy; showery, high wind.
Sun... 31	29.250	29.137	56	50	47	44	S.W.	.06	Boisterous with rain; very boisterous; heavy showers.
Mon... 1	29.143	28.894	54	40	49	45	S.W.	.16	Exceedingly boisterous; stormy; rain at night.
Tues... 2	29.821	29.484	49	26	48	45	N.W.	.00	Overcast, fine; cloudy but fine; very high tide in Thames; clear and frosty.
Mean	29.391	29.124	52.29	38.57	45.43	42.29	—	1.12	

POULTRY, BEE, AND PIGEON CHRONICLE.

TRIMMING.

WITH the publication of Mr. Hewitt's satisfactory letter upon trimming the discussion of the subject will probably close. It will, at all events, do so as far as I am concerned when I have briefly stated what is proposed to be done, and made a very few remarks upon such part of that letter as appears to be personal to myself.

Let me, then, assure Mr. Hewitt that I did not ask his "individual" opinion of trimming—the opinion of no honest man could be doubted. I asked his opinion and verdict as a judge, of the "question" as now practically existing. Neither was it correct for him to say that I had "cast reflections upon himself by name for neglect of exposure of trimming." Save in one case I have never mentioned him, except to ask him to speak (in that one case I expressly stated that no blame attached to him, for that the trimmed bird I was then speaking of would probably have deceived me). I have also stated that the practice has been so insidiously and gradually increasing, that it was very easy till quite lately not to notice it, and that "only in the improbable case of judges deliberately refusing, now attention had been called to the subject," to act justly, could any censure attach to them. Moreover, Mr. Hewitt's article on trimming, and the instances he quotes, do not prove that the discussion of the question and publication of his opinion now were not needed. When that article was written he and other judges would have disqualified a Spanish fowl if trimmed as at present; and as their practice, if not their opinion, has changed with regard to that, it was utterly impossible to know whether it might not with regard to the rest of the cases he quotes. I may also remark that only one case (the Game Bantams at Beverley), is within the last two years, during which very period it is that the evil has so increased; and further, they all belong, except the plucked Cobins, to the class of "startling enormities," which were not so much what I had in view as the wholesale system of merely plucking feathers. No judge could pass over a wired tail or dyed plumage if detected; while Mr. Hewitt will pardon my saying judges have of late almost uniformly passed the grossest cases of mere plucking, whether locks, hackles, or tails.

I have only said this to justify my own position, for I do not wish, and cannot afford, even the semblance of contention with one whom I have myself often spoken of as the best judge we have. With the other portions of Mr. Hewitt's letter I almost entirely agree, and I read with peculiar satisfaction what I understand to be his distinct pledge—that, so far as he is concerned, any undoubted cases of trimming which he shall detect will be met with disqualification. It is true, as he says, that many cases cannot be discovered; and I agree with him that it would be better far for half a dozen offenders to escape than for one innocent person to have the disgraceful stigma attached to him in error. It is true, also, that judges are sadly overworked. At Bristol they were disgracefully so; and when I found that only two judges were to arbitrate between 1200 pens of fowls I protested against the injustice quite as strongly, merely as an exhibitor, as Mr. Hewitt can do as a judge, and quoted it to certain correspondents who complained of several generally admitted errors as more than ample excuse. But on the one hand, the remedy for this is greatly in the judges' own power; and on the other, strange to say, at this very Show, where the judges were more overworked than at any other within my knowledge, there was confessedly more punishment dealt out to trimming than at any other within the last four years! That it was so is no discredit to the Judges. Things must go on unnoticed till attention is drawn to them; and had the influential protest published in these columns, with the many communications by which my own humble endeavours to get the subject dealt with were supported, not led those gentlemen to whom we owe so much to give more careful attention to the matter, it would have been strange indeed.

For myself, the very first step I took at Birmingham proves that I do not shrink from responsibility whenever I think personal action

can be of use. And I desire now briefly to state with regard to the future, that it is intended in the first place to bring the subject directly under the notice of the committees of our principal shows, and to ask them to adopt some such clause as that suggested by the Editors in this Journal, published January 21st. The necessity of reserving power to the committee is evident, as Mr. Hewitt himself virtually admits, that the judges cannot detect all even of the clearest cases. At the same time I must remark, that only in the very plainest instances ought a committee so to act, and that for every private exhibitor to make the matter a pretext for taking birds out of pens, would prove a nuisance to be met with instant and prompt repression. Honour and good sense will dictate the course for any exhibitor to follow in case of just suspicion.

Should our Birmingham friends or other committees thus provide the means of justice, the worst cases (doubtful ones will not be meddled with), will be protested against, and the result will then be seen. If they refuse even to insert a clause on the subject, it is my intention, if I can obtain the help of a sufficient number to avoid charges of personality, and to place facts beyond a doubt, to select some leading show, and to publish myself the worst and most undoubted cases—unless the judges themselves should so deal with them as to obviate the necessity, or give us an opportunity of acting in concert with them; or, unless, as I would fain hope, the recent discussion itself shall in a great measure lead to a better state of things. Oh, that this might be the case! No personal action that I or any judge can take can be taken without the deepest pain—void of honour, void of profit, void of thanks, void of pleasure is the task.

Is it quite hopeless to appeal to the peccant exhibitors? Many are the letters I have by me now from such, stating how they were driven into the practice in sheer self-defence—found they could not win without it—must do it because others did, but would gladly give it up. Two clergymen have written thus! At least a score have said they would desist "if the judges would only speak out." Well might I urge Mr. Hewitt to do so! Many will laugh, but there is something solemn in this to me. I would like to think the very worst of fraudulent exhibitors are not altogether past remorse, and would earnestly ask them, Is it a small thing thus to tempt and cause fraud in others who would be honest but for them? Is it a small thing to take one of the most innocent, genial, and useful recreations that can be found on earth and degrade it to the level of the betting-ring? They are one with us in our love of fowls; must we thank heaven that we as yet have been kept from falling by it, and feel that in all else there is between us and them an insuperable barrier? They are nearly all skilled breeders, who can win fairly and honourably their share of prizes—is it worth casting honour and conscience into the ditch for the sake of a few more? I appeal to them as to "brother fanciers," not to degrade our pursuit to mere gambling and deception.

But I must conclude; and with earnest and hearty thanks to the many who have aided me, and by their powerful support brought about the present measure of success, I leave the subject till time shall render it necessary briefly to state further results.—NEMO.

P.S.—In reply to my good friend, "Y. B. A. Z.," let me just add that I did not say no one objected to the practice of trimming Spanish, but that no one ever now objected to a pen for being trimmed, meaning, of course, simply that no formal protest was ever made now against an award on that ground. To the practice itself I object as strongly as he does.

As an occasional exhibitor I confess that I have, years ago, been guilty of the enormity of trimming fowls—to a very slight extent, but sufficiently to be considered "mere scum" by Mr. Manning; and it is more than probable that I may again be guilty of a similar misdemeanour, inasmuch as I hold with your correspondent "Brown Ken," with whose remarks I entirely concur, that moderate trimming, such as he alludes to, is allowable and even advisable.

Were the standard of morality among exhibitors so high that each would scorn to take advantage of his neighbour by the removal even

of a single feather, then I would at once sign the protest and abide by it; but in these times of almost universal exhibition it is unfortunately not so, and daily experience only serves to satisfy me the more that, as a rule, a man will win if he can. Mr. Hewitt very properly asks, "Where the line is to be drawn?" No line can be drawn; and it is with this conviction that I would urge the advisability of letting matters remain as heretofore, merely condemning all cases of palpable trimming by omitting them from the prize list. The proposed system—to aid which your suggestion, Messrs. Editors, is doubtless a good one, though there would, I fear, be no end to the objections—will simply serve to place protesters at a disadvantage with their competitors.

Trusting that you will insert these few lines from an old subscriber, I adopt for the present Mr. Manning's amusing epithet, and remain—
A FANCY TAILOR.

[We have one or two more communications upon this subject, for which we hope to find space next week. Presenting a memorial to the committees of the principal poultry shows, requesting them to adopt a rule such as we suggested, is the right course to pursue, and those committees will fail in duty if they do not thus aid in putting an end as much as possible to fraudulent exhibiting. One of the worst aspects of the correspondence upon the subject, is the fact that men who have thus acted fraudulently confess and defend the practice, though the only basis of defence is that an exhibitor may deceive when it is for his advantage. This evinces a moral obliquity we deeply regret. But we shall not examine in detail the apologies and defences that have been offered, for this general observation applies to each and every case of trimming or dyeing—it was done knowingly to deceive. If a prize was won, the owner of the best untrimmed or undyed pen was wronged out of the prize; and if the trimmed or dyed birds were sold, their owner cheated the purchaser.—EDS.]

We have been requested to add the following names to the protest—
C. Havers, The Beacons, Ingatestone.
Rev. S. C. Hamerton, Warwick.
W. S. Forest, Eagle Cliff, Greenhithe, Kent.
E. Douglas Pennant, Penrhyn Castle, Bangor.
R. Hulse, Caleb Gaine, J. Siddon, J. Platt, J. Dean, J. Grimer, and A. Dean, residing in Cheshire.

DELAY IN FORWARDING CATALOGUES, &c.

I SENT eight pens of poultry to Bristol Show, and seven stamps for a catalogue. The Show was held on the 2nd, 4th, and 5th of January. I did not receive a catalogue until the 6th, and only received six pens of birds back. How could I know whether the other two pens were not lost on the journey back, or what had become of them, as I did not receive any letter to say they were claimed until the 11th?

I also sent two pens to Hanley Show, and seven stamps for a catalogue. The Show was held on January the 12th, 13th, and 14th. I did not receive a catalogue until the 15th, and on the 16th one pen of fowls. What had become of the other pen, I did not know, until to-day (January 20th), when I received a letter to say it was claimed. I want to know if committees of shows think that this is courteous treatment, or a likely mode of getting entries for the next year? When anyone sends poultry to a show, he likes to know as soon as he can what the birds have done, and, if they do not all come back, what has become of them, especially if they are good; for one pen of mine claimed at Bristol won the first prize and was sold for £5 5s., and the other for £4 4s.; and the one at Hanley won the first prize and was sold for £5 5s. The Committee take 10 per cent. on all birds claimed, and I think might just write one line to say when birds are claimed.—HERBERT DOWSETT, *Pleshey, Chelmsford*.

WHITEHAVEN POULTRY SHOW.

THIS Show was held in the Riding School, Whitehaven, on the 26th, 27th, and 28th ult. There were nearly 900 entries of Poultry, Pigeons, Canaries, and Rabbits. Subjoined is the prize list:—

COCHINS (Cinnamon and Buff).—1 and Cup, H. Mapplebeck, Moseley, Birmingham. 2, W. A. Taylor, Manchester. *hc*, T. H. Readman, Whitby; Gunson & Jefferson, Whitehaven. *Chickens*.—1, T. Fenwick, Netherton. 2, W. A. Taylor. *hc*, C. W. Brierley, Middleton; H. Mapplebeck; J. H. Dawes, Birmingham; Bowman & Fearon, Whitehaven.

COCHINS (Brown or Partridge).—1, T. Stretch, Ormskirk. 2, H. Crossley, Broomfield, Halifax. *hc*, C. W. Brierley; W. A. Taylor. *Chickens*.—1, W. A. Taylor. 2, G. Chanley, Preston. *hc*, T. Stretch; J. K. Fowler, Aylesbury.

COCHINS (White).—1 and 2, R. Smalley, Lancaster. *hc*, W. Cook, Hale; W. F. Dixon, Whitehaven. *c*, T. Ashburner, Dalton-in-Furness. **COCHINS** (Any variety).—*Pullets*.—1, H. Mapplebeck. 2, J. K. Fowler. *hc*, H. G. Procter, Durham; R. Smalley.

CRABENA PECTORA (Any variety).—1 and Cup, Mrs. Burrell, Ipswich. 2, J. C. Cooper, Limerick. *Chickens*.—1 and 2, C. Layland, Warrington. *hc*, Miss Aglionby, Coniston; W. H. Brunton, Whitehaven; G. Dixon, jun., Whitehaven. *c*, W. Hargreaves, Eaenp. *Pullets*.—1, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor. 2, J. K. Fowler.

DORKINGS (Silver-Grey).—1 and 2, R. Smalley. *hc*, T. L. Jackson, Langholm; G. F. Lyon, Kirkmichael, Dumfries; J. Shorthose, Newcastle-on-Tyne; W. W. Rutledge. *c*, R. D. Holt, Orrest Head, Windermere. **DORKINGS** (Any other variety).—1, Cup, and *hc*, Gunson & Jefferson. 2, J. White, Whitby, Netherton, Wakefield. *Chickens*.—1, J. Stirling, Bridekirk. 2, J. Walker, Knaresborough. *hc*, J. Stirling; D. Hardie. *c*, W. Fox, St. Bees. *Pullets*.—1, J. Shorthose. 2, D. Hardie, Sorbie. *hc*, T. Rogers, St. Helen's; R. D. Holt; J. White; Hon. H. W. Fitzwilliam, Wentworth Woodhouse. *c*, Mrs. M. Seamons, Aylesbury.

SPANISH.—1, H. Beldon, Goitstock. 2, J. R. Rebdar, Warrington. *hc*, Hon. Miss Douglas Pennant. *Chickens*.—1, Cup, and *hc*, H. Beldon. 2, H. Wilkinson. *hc*, J. Smith, Keighley; W. Patterson, Langholm; W. R. Bull, Newport Pagnell; J. H. Wilson. *Pullets*.—1, T. & E. Comber, Middleton Hall, near Warrington. 2, J. Thresh, Bradford. *hc*, T. J. Harrison; Miss B. Redpath, Edinburgh.

FRENCH FOWLS (Any variety).—1 and Cup, W. R. Park, Melrose. 2, Hon. C. W. Fitzwilliam. Extra 2, Mrs. Wilkin (Houdans). *hc*, Mrs. Wilkin, Bostle Rectory (Crève-Cœur); L. Biney, Manchester; H. Beldon; Col. Stuart Wortley, London; C. Homfray, Caerleon; Mrs. Wilkin; J. K. Fowler.

GAME (Any variety).—1 and Cup, J. H. Wilson, St. Bees. 2, J. Fletcher, Stoneclogh. 3, L. Biney. *hc*, J. H. Wilson; H. M. Julian, Hull. *Cockerel*.—1, Cup, and 2, J. Hodgson, Whittington. 3, J. Brough, Carlisle. *hc*, J. Fletcher; H. M. Julian; D. Hardie; G. Brown, Alth; J. H. Wilson; J. Waddell.

GAME (Black-breasted and other Reds).—1 and Cup, J. Fletcher. 2, S. Matthews, Stowmarket. *hc*, G. R. Smith; J. Fletcher; J. Brough. **GAME** (Any other variety).—1, H. M. Julian. 2, J. Fletcher (Piles). *hc*, J. Waddell. *c*, W. A. Fenwick, Kirby-Lonsdale. *Pullet*.—1, J. Hodgson. 2, J. Fletcher. *hc*, L. Biney; W. Boulton, Dalton-in-Furness; L. Casson, Ulverston; J. H. Wilson.

HAMBURGS (Golden-spangled).—1, J. Walker. 2, N. Marlor, Denton. *hc*, J. Walker; H. Beldon; T. Stuart, Staveley, Kendal.

W. A. Hyde, Prospect Cottage, Hurst, *disqualified, pins being put through the cock's comb*.

HAMBURGS (Silver-spangled).—1 and Cup, H. Beldon. 2, J. Walker. *hc*, H. Pickles, jun., Earby, Skipton; J. Fielding. *c*, W. A. Taylor; H. Beldon.

HAMBURGS (Golden-pencilled).—1 and 2, J. Walker. *hc*, H. Beldon; W. Clayton, Keighley; W. R. Park. *c*, F. Johnson, Brampton; S. Smith, Northwram.

HAMBURGS (Silver-pencilled).—1 and 2, H. Beldon. *hc*, J. Walker.

HAMBURGS (Any variety).—*Pullets*.—1, H. Beldon. 2, E. G. Jones. **ANY OTHER DISTINCT VARIETY** (Except Bantams).—1, M. Nicholls, Peel, Isle of Man. 2, H. Beldon. *hc*, W. G. Holt (Cuckoo Cochins); H. Beldon; J. C. Cooper; P. Unsworth; J. Hird (Japanese); J. K. Fowler (Niggera).

SELLING CLASS (Any variety).—1, Bowman & Fearon (Spanish). 2, H. Beldon. 3 and 4, R. Smalley (White Cochins and Dorkings). *hc*, J. Walker; Bowman & Fearon; O. E. Creswell, Hanworth; D. C. Campbell, M.D., Brentwood; G. Dixon, jun.; H. Beldon; P. Unsworth; H. B. Lindsay; Gunson & Jefferson; J. R. Robinson; W. Boulton; D. Hardie; J. Sharples; W. Anderson; J. H. Wilson. *c*, D. Hardie; J. H. Dawes.

GAME BANTAMS (Any variety).—*Cock*.—1 and Cup, J. R. Robinson. 2, W. Butcher, Notting Hill, London. Extra 2, J. W. Morris, Rochdale. *hc*, Bowman & Fearon; G. Maples; J. Waddell.

GAME BANTAMS (Any variety).—1, L. Biney. 2, G. Hall, Kendal. *hc*, J. R. Robinson. *c*, J. W. Morris.

BANTAMS (Any other variety).—1, T. C. Harrison, Hull. 2, H. Stott. Extra 2, H. Pickles, jun. *hc*, S. H. Stott; T. Burgess; R. Yowll; J. H. Dawes; A. K. Briggs.

DUCKS (Aylesbury).—1 and Cup, Mrs. M. Seamons. 2, J. K. Fowler. *hc*, D. Hardie.

DUCKS (Rouen).—1, A. Dickison, Distington. 2, J. Fox, St. Bees. *hc*, J. White; D. Hardie. *c*, J. J. Waller; Gunson & Jefferson; T. Robinson.

DUCKS (Black East Indian).—1, S. Burn, Whitby. 2, Rev. W. Sergeantson, Acton Burnell Rectory, Shrewsbury. *hc*, M. A. Hayne; Rev. W. Sergeantson.

DUCKS (Any other variety).—1, T. C. Harrison. 2, C. N. Baker, Chelsea. *hc*, R. Beattie; T. C. Harrison; C. W. Brierley; S. Burn. *c*, A. K. Briggs.

GEES (Any variety).—1, S. H. Stott. 2, Mrs. J. Birkett, Workington. *hc*, Rev. G. Hustler.

TURKEYS (Any variety).—1, J. Fox. 2, J. Cowman, Whitehaven. *hc*, J. J. Harrison; C. Fisher, Distington Hall.

RABBITS (Lop-eared, any variety).—1, A. H. Easteo, Hull. 2, Bowman and Fearon. *hc*, J. R. Jessop, Hull; C. Crossley; A. H. Easteo; C. King; G. Jones; A. Crossley; Bowman & Fearon. *Any other variety*.—1, A. H. Easteo. 2, J. Bell, Cleator Moor. *hc*, Master E. Braithwaite; E. E. M. Royds.

WEST CUMBERLAND CLASSES.

DORKINGS (Any variety).—*Cock*.—Cup, Gunson & Jefferson. 2, A. Thompson, The Cross. *hc*, Gunson & Jefferson; J. Postlethwaite. *Hens*.—1, J. H. Wilson. 2, Miss Spedding, Whitehaven. *hc*, J. Postlethwaite; J. Stirling; Gunson & Jefferson.

DORKINGS (Silver-Grey).—1 and Cup, J. Cowman. 2 and *hc*, Miss Borthwick, Flimby. *c*, J. H. Wilson.

COCHINS (Any variety).—*Cock*.—Cup and 2, Bowman & Fearon. *hc*, J. H. Wilson; Miss Spedding. *Hens*.—1, J. H. Wilson. 2, S. Sherwen. *hc*, Bowman & Fearon.

BRAMMAS (Any variety).—*Cock*.—Cup, G. Dixon, jun. 2, G. Turner, Ellen Grove, Wigton. *hc*, W. Cook; Master W. Bowman. *Hens*.—1, G. Dixon, jun. 2, Master W. Bowman. *hc*, G. Turner; W. H. Telford; G. Dixon, jun.

SPANISH (Any variety).—*Cock*.—Cup, J. H. Wilson. 2, Bowman and Fearon; *hc*, Bowman & Fearon; S. Moore; J. H. Wilson. *Hens*.—1, J. H. Wilson. 2 and *c*, Bowman & Fearon. *hc*, Gunson & Jefferson.

GAME (Any variety).—*Cock*.—Cup, J. H. Wilson. 2, Bowman & Fearon. *hc*, H. Birkett. *Cockerel*.—1 and Cup, A. Briggs. 2, Sergt. W. Robinson, Whitehaven. *hc*, T. Charters, jun; Gunson & Jefferson. *Hens*.—1, J. Wilson. 2, Gunson & Jefferson. *hc*, A. Briggs.

HAMBURGS (Any variety).—*Cock*.—Cup, S. Moore, Abbey Town. 2, Bowman & Fearon. *hc*, Bowman & Fearon; A. Briggs. *Hens*.—1, Bowman & Fearon. 2, Miss Wilson, High Walton. *hc*, A. Briggs; J. Cowman.

BANTAMS (Any variety).—*Cock*.—Cup, and *hc*, Bowman & Fearon. 2, H. J. Nicholson, Holborn Hill, Cumberland. *c*, W. Robinson. T. Smith

jan. J. H. Wilson. *Hens*.—1, Bowman & Fearon. 2, Gauson & Jefferson, Whitehaven.

Ducks (Any variety).—Cup, J. Stirling. 2, Bowman & Fearon. *hc*, A. Dickinson. 3, Sherwen. Miss Spedding.

Ducks (Aylesbury).—Cup, Mrs. J. Birkett. 2 and *hc*, Bowman & Fearon. *c*, J. Postlethwaito; J. Dees; Mrs. J. Birkett; W. F. Dixon.

PIGEONS.

CARRIERS (Any colour).—1, R. Fulton, Dapford. 2, J. Hawley, Biogley. *hc*, F. J. Leach, Middleborough; W. Harvey, Shefield; R. Fulton. *c*, F. J. Leach; E. Horner, Harewood.

POUTERS (Any colour).—1, Cup, and 2, R. Fulton. *hc*, W. Harvey; E. Horner.

TUMBLERS (Almond).—1, R. Fulton. 2, J. Hawley. *hc*, J. Fielding, jun. Rochdale; C. Cowburn, Leeds. *c*, F. J. Leach.

TUMBLERS (Any other variety).—1, J. Hawley. 2, R. Fulton. *hc*, J. A. Naylor, Berwick-on-Elmet; J. Thompson, Biogley; J. Fielding; R. Fulton.

JACOBS (Any colour).—1, J. Thompson. 2, Mrs. S. Vigor, Uxbridge. *hc*, J. Waddell, Acrehead, Dumfries. *c*, R. Fulton; J. & W. Towerson, Egremont.

TRUMPETERS (Any colour).—1 and 2, E. Horner.

BARBS.—1, E. Horner. 2, G. Charley, Preston. *hc*, G. Charley. *c*, R. Fulton.

TURBOTS (Any colour).—1, F. J. Leach. 2, C. Crossley, Halifax. *hc*, T. Newall, Ashton-on-Lyme; F. Sale, Derby; E. Horner; H. Yardley, Birmingham; J. Waddell.

OWLS (Any colour).—1, J. Fielding. 2, T. Newall. *hc*, J. N. Harrison, Belper; H. Yardley; J. & W. Towerson.

FANTAILS (Any colour).—1, H. Yardley. 2, E. Horner. *hc*, F. J. Leach; J. E. Speace, Cramond; H. Yardley.

DRACOONS (Any colour).—1, W. Harvey. 2, E. Horner. *hc*, J. Walker, Whitehaven; J. Thompson; H. Murray, Gateshead.

CARRIERS (Any variety).—Cup, J. & W. Towerson. 2, S. Sherwen, Whitehaven. *hc*, J. & W. Towerson. *c*, J. Weeks.

FANTAILS (Any variety).—Medal, J. Key, Whitehaven. 2, S. Sherwen. ANY OTHER DISTINCT VARIETY.—1, F. Sale. 2, H. Yardley. *hc*, J. Weeks, Bootle (Runts); R. Smalley (Snaibins); H. Yardley; J. Thompson; E. Horner.

SELLING CLASS (Any variety).—1, J. Thompson. 2, H. Yardley. Extra 2, J. Hawley. *hc*, H. Murray; F. Key, Beverley; E. Horner; R. Smalley; Gauson & Jefferson.

CANARIES.—*Belgian* (Yellow).—1 and 2, T. Woodend, Gill, Ulverstone. *hc*, Sergt.-Major J. Paxton. *c*, S. Sherwen; R. Hall. *Belgian* (Buff).—1, T. Woodend. 2, J. Choyce, Whitehaven. *hc*, J. Thompson. *c*, R. Hawman; J. Thompson. *Mules* (Yellow).—1 and 2, W. Robinson, Workington. *c*, T. Woodend. *Mules* (Buff).—1, R. Hawman. 2, J. Thompson. *Pied* (Yellow or Buff).—1, R. Hawman. 2, Miss E. Hardy, Harrington. *hc*, T. Woodend. *c*, F. Johnston. *Lizards* (Gold or Silver-spangled).—1 and 2, R. Hawman. *hc*, J. N. Harrison.

JUDGES.—*Poultry*: E. Hewitt, Esq., Sparkbrook, Birmingham, and R. Teebay, Esq., Fulwood, Preston. *Pigeons*: Mr. H. Beldon, Goitcock, Bingley. *Canaries*: Mr. W. Lyon, and Mr. J. Walker, of Whitehaven. (Illness prevented Mr. Hewitt acting as Judge.)

CREWE POULTRY SHOW.

THIS took place on the 26th and 27th of January, and notwithstanding the Whitehaven Show being held on the same days, proved very successful, there being upwards of 800 entries. The *Dorking*, *Cochin-China*, and *Game* classes were very good. We shall give the Pigeon awards next week.

DORKINGS (Coloured).—1, W. Harvey. 2 and 3, F. S. Arkwright.

DORKINGS (Any variety).—1, W. H. King. 2, J. Stott (Silver-Grey). 3, Countess of Aylesford (Cuckoo Dorking).

SPANISH.—1, R. Hulse. 2, J. Stevens. 3, J. Mensell.

COCHIN-CHINA (Cinnamon and Buff).—1, C. W. Brierley. 2, J. Sichel. 3, W. A. Taylor.

COCHIN-CHINA (Brown and Partridge).—1 and 2, E. Tadman. 3, C. W. Brierley.

COCHIN-CHINA (White).—1, R. Chase, Balsall Heath. 2, F. Haworth. 3, R. Brown. *hc*, H. Hobson.

BRAHMA POOTRA (Dark).—1, Hon. Miss Douglas Pennant. 2, C. W. Brierley. 3, J. Heath, Nantwich.

BRAHMA POOTRA (Light).—1, H. Dowsett, Pleshey, Chelmsford. 2, J. Lomax. 3, D. Causer.

POLISH (Any variety).—1, W. Harvey. 2, J. Smith, Hull. 3, J. Laming.

FRENCH FOWLS (Any variety).—1, R. B. Wood, Uttoxeter (Hondans). 2, L. Biney, Manchester (Hondans). 3, J. Sichel.

GAME (Black-breasted Reds).—1, C. Chaloner. 2, E. Aykroyd. 3, C. W. Brierley. *Chickens*.—1, J. Stubbs. 2, C. W. Brierley. 3, J. Halsall, Ince.

GAME (Brown and other Reds, except Black-breasted).—1, C. W. Brierley. 2, T. Whittingham. 3, J. Bowness. *Chickens*.—1, T. Whittingham. 2, S. Matthews, Stowmarket. 3, W. Miller.

GAME (Duckwings and other Greys and Blues).—1, C. Chaloner, Whitwell, Chesterfield. 2, T. Jones. 3, E. Aykroyd, Bradford. *hc*, J. Halsall. *Chickens*.—1, Duke of Sutherland, Tronham. 2, S. Matthews. 3, J. Halsall.

GAME (Any other variety).—1, R. Swift, Southwell (Piles). 2, C. W. Brierley (Piles). 3, S. Matthews (Piles). *Hens*.—1, T. Whittingham (Brown Reds). 2, Mrs. E. S. Belyse (Brown Reds). 3, G. Bagnall.

GAME BANTAMS (Black-breasted).—1, G. Noble, Staincliffe, Batley. 2, C. W. Brierley. 3, W. Griffiths.

GAME BANTAMS (Any other variety).—1, J. Crosland, Wakefield (Duckwing). 2, A. Parsons. 3, Mrs. S. Pearson (Duckwings).

BANTAMS (Any variety except Game).—1, Mrs. E. S. Belyse (Sebright). 2, S. & R. Ashton, Mottram (Black). 3, S. H. Stott (Japanese).

HAMBURGHS (Golden-spangled).—1, T. Boulton. 2, W. McMellon. 3, T. Blakeman.

HAMBURGHS (Silver-spangled).—1, Duke of Sutherland. 2, H. Pickles, Early. 3, Mrs. Flynn. *hc*, Duke of Sutherland.

HAMBURGHS (Golden-pencilled).—1, W. H. Park, Melrose. 2, J. Smith, 3, Duke of Sutherland.

HAMBURGHS (Silver-pencilled).—1, H. Pickles. 2, J. Laming. 3, Duke of Sutherland.

ANY DISTINCT VARIETY NOT NAMED.—1, Mason & Walker (Black Hamburg). 2, Rev. A. G. Brooke, Ruyton XI. Towns. 3, R. Loft (Sultans).

DUCKS (Rouen).—1 and 2, T. Burns. 3, G. Bagnall. *hc*, J. J. Waller; T. Burgess.

DUCKS (Aylesbury).—1, Mrs. M. Seamons, Aylesbury. 2 and 3, Mrs. M. Hornby.

DUCKS (Any other variety).—1, C. N. Baker, Chelsea (Mandarin). 2, C. W. Brierley. 3, G. Barbour (Carolina).

GESE (White).—1, Mrs. M. Seamons. 2, S. H. Stott. 3, Rev. G. Hunter, Stillingfleet Vicarage, York.

GESE (Mottled).—1, S. H. Stott. 2 and 3, C. F. Dean.

TURKEYS.—1 and 2, J. E. Richardson. 3, T. Whittingham.

SELLING CLASS.—1, Mrs. A. Wilkinson (Cochins). 2, F. Cooper (Spanish). 3, Rev. W. Sergeantson.

SINGLE COCKS.

DORKINGS (Any variety).—1, J. Martin. 2, F. S. Arkwright, Etwell Hall, Derby. 3, E. Ryder. *hc*, L. Patton.

COCHIN-CHINA (Any variety).—1, H. Maplebeck, Moseley, Birmingham. 2, E. Tadman, Whitechurch, Salop. 3, R. Chase, Balsall Heath.

BRAHMA POOTRA (Any variety).—1, J. H. Pickles. 2, Mrs. Barritt. *Game* (Any colour).—Cup, C. Chaloner. 2, W. Miller. 3, E. Aykroyd.

Cockereels.—Cup, C. W. Brierley, Middleton. 2, A. Haslam. 3, E. C. Gilbert. *hc*, T. Burgess; J. Stubbs.

SONG BIRDS.

CANARIES.—*Clear Yellow*.—1, H. Sumner. 2, R. Green. *hc*, H. Sumner. *Clear Buff*.—1, H. Sumner. 2, R. Green. *hc*, H. Sumner. *Crested*.—1, H. Ashton. 2, H. Sumner. *hc*, J. Banks. *Variegated*.—1 and 2, R. Green. *hc*, J. E. Saul. *Mule*.—1 and 2, H. Ashton. *hc*, T. Carrington. *c*, — Thompson; — Williamson.

BULLFINCH.—1, D. Poole. 2, S. Williamson. *hc*, D. Poole.

LINNET.—1, S. Williamson. 2, E. Billington. *hc*, S. Williamson; J. Ward.

LARK.—1, S. Williamson. 2, T. Carrington.

RABBITS.—*Hennied*.—1, G. Jones. 2, A. H. Easton. *Lop-eared*.—1, A. H. Easton. 2, F. S. Arkwright. *hc*, C. King; — Bins; J. Robinson. *hc*, G. Jones. *c*, O. Spencer. *Silver-Grey*.—1, C. Rayson. 2, J. Sykes. *hc*, J. R. Jessop; — Bins; W. B. Etches. *Any variety*.—1 and 2, C. Rayson (Angora, Himalayan). *hc*, G. Jones; W. B. Etches (Angora).

JUDGES.—*Poultry*.—Mr. John Douglas, Clumber; and Rev. E. S. Hodson, North Petherton. *Pigeons*.—Mr. Ridpath, Rusholme.

CORK AND SOUTH OF IRELAND POULTRY SHOW.

THIS Show was held January 27th and 28th in the Athenæum, Cork. There were upwards of 300 entries of Poultry, Pigeons, and Song Birds. In the poultry department the *Game*, *Houdan*, and *Turkey* classes were very good, and of *Pigeons* the Yellow Barbs and Red and Yellow Jacobins. The following is a list of the awards:—

SPANISH.—1, J. C. Cooper, Limerick. 2, G. A. Stephens, Dublin. *Chickens*.—1, G. A. Stephens. 2, J. C. Cooper. *c*, R. P. Williams, Clontarf.

DORKINGS (Grey).—1, H. L. Tivy, Limerick. 2, Mrs. Haye, Queestown. *hc*, J. C. Cooper. *Chickens*.—1, J. C. Cooper. 2, T. O'Grady, Bandon.

DORKINGS (Any colour except Grey).—1, R. P. Williams. 2, J. C. Cooper. *hc*, R. Perry, Cork (White).

COCHINS (Buff).—1, J. C. Cooper. 2, J. K. Milner, Blackrock. *hc*, Mrs. Hay.

COCHINS (Any colour except Buff).—1, W. H. Perrin, Chantilly, Co. Dublin (Partridge). 2, H. L. Tivy (White). *c*, Mrs. E. H. Gubbins, Milton, Kilmallock (Partridge); C. F. Staunton, Clondalkin (Partridge).

BRAHMA POOTRA.—1 and 2, J. C. Cooper. *hc*, Mrs. S. A. King, Whitegate (Light). *c*, Rev. T. Townsend, Aghada, Whitegate; Mrs. E. H. Gubbins; W. H. Perrin; G. A. Stephens; W. H. Bennett, Ballinacurra, Middleton.

CRÈVE-CŒURS OR *LA FLÈCHE*.—1, J. C. Cooper (La Flèche). 2, Mrs. E. H. Gubbins (Crève-Cœur). *hc*, G. A. Stephens (La Flèche); J. C. Cooper (Crève-Cœur). *c*, Mrs. E. H. Gubbins (Crève-Cœur); Mrs. Webb, Knocktoran (La Flèche).

ROUDANS.—1, J. C. Cooper. 2 and *c*, Mrs. Hay. *hc*, F. W. Pim, Harold's Cross, Dublin.

POLISH (Crested).—1, F. W. Pim (Silver). 2, R. P. Williams (Crested and Gold-spangled). *hc*, Miss Perry, Cork (White). *c*, F. W. Pim (Silver).

HAMBURGHS (Gold or Silver).—1 and *hc*, T. O'Grady (Silver-pencilled). 2, Hon. Mrs. H. B. Bernard, Coolmaine, Bandon (Silver-spangled). *hc*, T. O'Grady (Silver-pencilled).

GAME (Reds).—1 and 2, T. H. Markham, Mausfield, Kinsale (Black Red). *hc*, G. A. Perrin (Brown Red).

GAME (Any colour except Red).—1 and 2, T. H. Markham (Piles). *c*, N. W. Roche, Clonakilly (Pile); J. Hosford (Red Dun).

GAME BANTAMS.—1, T. O'Grady (Red). 2, W. D. Allyn, Clonakilly. *hc*, N. W. Roche (Pile). *c*, J. Jefferies, Cork (Duckwing); N. W. Roche (Duckwing).

BANTAMS (Any variety except Game).—1, Hon. U. B. Roche, Traholyand (Silver Sebright). 2, A. W. Shaw, Limerick (Black). *hc*, W. H. Bennett (Gold Sebright); Hon. Mrs. H. B. Bernard (Sebright). *c*, Mrs. Staunton, Clondalkin (Rumpless).

TURKEYS.—1 and 2, J. C. Cooper. *c*, R. Briscoe, Fermoy. *Pouls*.—1, J. C. Cooper. 2, Countess of Bandon, Castle Bernard, Bandon. *hc*, R. Briscoe. *c*, J. C. Cooper; S. D. O'Grady, Aghamarta, Carrigaline; J. T. Wakeham, Cork.

GESE (White).—1, J. C. Cooper. 2, F. Beamish, Cork.

GESE (Coloured).—1, R. P. Williams. 2, J. C. Cooper (Grey).

DUCKS (White).—1, R. P. Williams (Aylesbury). 2, Mrs. E. Smith, Clonakilly (Peruvian). *hc*, J. C. Cooper (Aylesbury). *c*, F. W. Pim; Countess of Bandon (Aylesbury).

DUCKS (Coloured).—1, R. P. Williams (Ronen). 2, Mrs. E. Smith. Commended, J. C. Cooper (Ronen).

PIGEONS.

POUTERS (Black or Blue Pied).—1 and 2 J. H. Perrott, Cork.
 POUTERS (Red, Yellow, or Mealy, Pied).—1 and 2 J. H. Perrott. c, J. Lloyd, Cork.
 POUTERS (Any other colour).—1 and 2, H. Perrott (White). c, J. Jefferies (White).
 CARRIERS (Black).—1, J. Jefferies. 2, G. A. Wherland, Blackrock, Cork.
 CARRIERS (Any other colour).—1, J. Jefferies (Duns). 2, G. A. Wherland (Duns).
 TOMBLERS (Almond).—1, J. Perrott. 2, J. Jefferies.
 TOMBLERS (Any other Short-faced).—1, H. L. Tivy (Kites). 2, L. P. Ryder, Cork (Reds).
 BARS (Black).—1, J. H. Perrott. 2, J. Dowling, jun., Blackrock, Cork.
 BARS (Any other colour).—1 and 2, G. A. Wherland (Yellow). 2, J. H. Perrott (Yellow). c, Miss Perry (Yellow); J. H. Perrott (Red).
 JACOBI'S (Red or Yellow).—1, L. P. Ryder (Yellow). 2, J. Perry, hc, J. H. Perrott (Red); c, Masters Blennerhassett, Rockfield, Kilpeacon (Reds).
 JACOBI'S (Any other colour).—1, T. O'Grady (White). 2, J. H. Perrott (Black).
 FANTAILS (White).—1, Masters Blennerhassett. 2, J. Pike, Besborough. c, J. Jefferies.
 FANTAILS (Any other colour).—1, Masters Blennerhassett (Blue). c, J. Pike (Blue). 2, Masters Blennerhassett (Blacks); J. Pike (Blue).
 TRUMPETERS (Mottled).—1 and 2, J. H. Perrott.
 TRUMPETERS (Any other colour).—1, Masters Blennerhassett. 2, J. Pike (White). c, J. H. Perrott (Black).
 OWLS.—1, J. H. Perrott (White). 2, H. L. Tivy (Blue). hc, L. P. Ryder, (Blue). c, L. P. Ryder (Blue); J. Pike (Black); J. H. Perrott (Blue).
 TURBANS.—1, J. Dowling, jun. (Blue). 2, L. P. Ryder (Blue Point-headed). c, H. L. Tivy (Red shell-crowned); J. Dowling, jun. (Blue and Yellow).
 NUNS.—p, Masters Blennerhassett.
 MAGPIES.—1 and 2, Masters Blennerhassett (Yellow and Blue).
 TOMBLERS (Common).—1, J. Perry (Baldpates). 2, J. H. Perrott.
 ANY OTHER VARIETY.—1, J. Lloyd (Silver Rants); 2, Masters Blennerhassett (Blue Brunswick).
 Special Prize presented by J. B. Blennerhassett, Esq., for the best pair of Carriers.—G. A. Wherland.
 Silver Medal, presented by the Secretary of the North British Columbarian Society, for the most perfect Pied Pouter in colour and marking; not less measurement than 18½ inches in feather, and 6½ inches in limb.—J. H. Perrott. *Who*, H. L. Tivy (Yellow).

SONG-BIRDS.

CANARIES (Yellow, with Crest).—1, Hon. U. B. Roche. 2, H. E. Bond, Cork.
 CANARIES (Yellow, without Crest).—1 and 2, F. Hodder, Blackrock.
 CANARIES (Any other colour).—1, A. Veitch, Cork. 2, T. Babington, Cork.
 GOLDFINCH MULES.—1 and 2, F. Hodder. c, W. P. Harris, Blackrock, Cork; W. B. O'Connell, Cork.
 LINNET MULES.—1, F. Hodder. 2, W. E. O'Hea.
 GOLDFINCHES.—1, F. Hodder. 2 and c, P. Keating, Cork.
 BULLFINCHES.—1, Mrs. Perry. 2, F. Hodder.
 SKYLARKS.—1 and 2, J. Lennie, Cork. hc, E. Barrett, Cork.
 LINNETS.—1, P. Keating. 2, J. Dowling, juv.
 THRUSHES.—1, J. Jefferies. 2, J. Kennealy, Cork.
 JUDGES. *Poultry and Pigeons*: P. H. Jones, Esq., Fatham, London; *Song Birds*: A. Parker, Esq., Cork.

ANTWERPS.

As the Antwerp Pigeon is fast growing into favour among those who admire the various varieties of this beautiful bird, a short notice of it may not be uninteresting.

The Antwerp is a prolific breeder and tender nurse, and has that most fascinating of all properties in the Pigeon tribe, love of home, developed to a most extraordinary degree. I have known a pair of old birds, although treated with great care, and bred from for two seasons in succession at the place to which they were sent, return to their old home, a distance of some miles, the first time they were allowed to get on the wing; indeed, a well-bred bird of this kind never seems to settle away from the loft in which it is reared.

The Antwerps are excellent flyers, if exercised regularly once a-day, going up in the air as high as Tomblers; but instead of continuing to circle round home they will range off for an hour or more, when they may be seen returning like specks in the clouds, and at once make their pitch upon the building to which they belong. They are very hardy, and in my opinion as handsome as any of the Pigeon tribe. Nothing can be prettier than a pen of carefully-bred and evenly-coloured birds of this class.

Their points are as clearly defined as those of any other variety, and I cannot understand why there should not be a class for them at every show. The pure Antwerp should be compact, hard-feathered, and of medium size; colour blue, blue chequer, dun, or dun chequer; but after breeding them for many years I prefer the blue to any other colour, both for beauty and for stoutness. The head should be neatly formed, full, and well topped; the eye bright and clear colour imma-

terial, slightly warted; the beak short, strong, broad at the base, with neatly set-on wattle; the breast and shoulders wide in proportion to the rest of the body; the flight feathers long, reaching to the end of the tail, which should be narrow and compact; and altogether the bird should have the appearance of being possessed of great powers of flight.—B. F. C.

MANAGEMENT OF SUPERS.

In page 434 of your last volume a correspondent asked why his bees would not take to supers—I forget the exact terms of his question—and whether his hives were full enough to warrant supers at all. You cannot always make bees do what you wish. Perhaps they knew (they always seem to do so), that it would be a dry summer, and so not an over-abundant one. To attract them into supers, if bars or frames are used, one comb with brood and the bees on it is pretty sure to bring them up, as they like to store honey near brood. The brood-comb may be afterwards removed. They may bring pollen too. In a glass this plan, of course, fails, and the best thing is a long bit of comb hanging down to the communication. This, of course, is not so safe as the other.—H. R.

FOUL BROOD.

OPINIONS AS TO ITS ORIGIN.

(Continued from page 75.)

"A RENFREWSHIRE BEE-KEEPER," the great advocate in these pages of the non-swarmer or combination-of-swarms system, and whose glowing description of the mighty results attained thereby by our little favourites in the shape of monster honey-supers, so delights all of us, though in the case of many, I fear, whose camps are pitched in a comparatively desert land to the "Canaan" in which he dwells, such results are totally beyond their reach—"A RENFREWSHIRE BEE-KEEPER," when reviewing the subject of foul brood in February, 1867, and with reference to the opinions entertained by me, says, "My experience forces on me the conviction, that overheating rather than any amount of experimenting and chill induces this most mysterious malady," and mentions a case which occurred in his own apiary in confirmation of this opinion. In narrating the story of his "honey-judge" visitor, which seems to have led to the formation of the "overheating" theory, he presupposes the astonishment which I should feel on this theory being announced. Now, it so happens that I hail this theory as one virtually quite in accordance with my own. Extremes, it is said, do often meet. So here, diverse anterior causes may produce results quite uniform and identical. Supposing "A RENFREWSHIRE BEE-KEEPER" to accompany me through some lone mountain pass. We there discover the remains of what was once a living organism. No one can tell the cause of death, but already we see, through the operation of natural laws, symptoms of decay and corruption. Already the mouldering carcase has become the food of those occult orders of existences which live and revel on death, and the whole atmosphere around is tainted and vitiated by the putrescent miasma. What matters it whether that once-living form was deprived of life by frost or fire, by cold or heat—whether by an electric flash of heaven's hot artillery, or by an agency of an opposite character, are not the results the same, with all the attendant evils we now witness? So with the chilled or overheated dead larvæ in the hives, are not the ultimate characteristics the same? And what may be predicated of the one, may we not also predicate of the other?

Then, lastly, we have the fungoid theory of Dr. Preuss, of Dirschau, contained in a very interesting paper translated from the German "Bee Journal," and inserted in this Journal in October last by Mr. Woodbury, to whom we must again express our obligations. By submitting a particle of the foul-brood matter under a microscope having a magnifying power of 600 diameters, Dr. Preuss was enabled to discover "a thousand dust-like shaped bodies, which are known to the microscopist as fungi, which belong to the species *Cryptococcus* (Kützing). He says this fungus is closely allied to the fermentive fungus, and that fungi, especially the microscopic kinds, "change and transform one into the other, according to the different substances upon which they alight." Hence he believes that the fermentive fungus which is very much diffused throughout nature, "may, when it comes in contact with, or when as food it enters the body of the bee larva,

change itself under peculiar conditions of temperature and moisture into *Cryptococcus alvearis* (as he terms it), foul-brood fungus." He further says the fungus first attaches itself to the larva, but in trifling quantity. It lives on, until, when in the nymphoid state, it is killed by the "fungus multiplying prodigiously in geometrical progression, which also continues to increase after the death and at the expense of the chrysalis, which it ultimately changes entirely into itself."

The theory of Dr. Preuss, who, besides being a scientific microscopist, is an experienced apiarian, has attached to it the weighty name of the distinguished entomologist M. Leuckart, who, it appears, attributes, with Dr. Preuss, the worst kind of foul brood to the presence of microscopic fungus.

It is but right here to remark, that the fungoid theory is not a new one to the readers of this Journal, and whatever credit Dr. Preuss may be entitled to in respect to the views which he has associated with it, yet the theory itself has been so far anticipated by "G. F. B., *Spalding*," who in a very interesting article under date of September 1st, 1863, came to the conclusion, after having subjected portions of foul-brood combs to microscopic examination, that whatever might be the anterior cause, "the disease itself is the result of the action and presence of fungi."

I may also recall the fact, that in an article of my own of the 12th of January, 1864, when narrating the results of a microscopic examination of foul brood which an eminent professional gentleman undertook at my request and in my presence, I stated, that though he failed to detect, after the most painstaking investigation, life of any kind in the putrescent matter submitted to him, yet he discovered in some fermenting honey innumerable fungi, beautifully interspersed throughout, dotting the whole area of vision with numberless globular-looking bodies corresponding to the fungi usually found in all fermented liquors.

Without pronouncing any decided opinion, however, upon Dr. Preuss's fungoid theory, I would only say that it looks highly feasible, and so far as my experience of the origin of foul brood is concerned, is quite reconcilable therewith.

As I have already stated, the point to which I principally directed my attention hitherto in the discussion of foul brood, was, How it originated. Now, it is very satisfactory to see, not only from the observations before quoted of Baron von Berlepsch, but now more particularly from those of Dr. Preuss, that the opinions I then propounded as to the anterior cause of foul brood, and which were at that time so strenuously opposed by almost all the apiarian writers in this Journal, have the high sanction of Dr. Preuss in his fungoid theory. His views are so nearly identical in some points with those I expressed in 1863-4, that I may be pardoned quoting a sentence or two. He says, "A particularly favourable soil (for the fermentive fungus), is found in dead and mouldering larvæ or chrysalids; and for this reason, if brood which has died from cold or other causes be permitted to remain in the hive, it may occasion virulent foul brood, without feeding with deleterious honey or such like." And again, "The removal of a hive, by which too many bees are lost, and those remaining are unable to foster the brood, may promote foul brood." And again, "The multiplication of stocks by artificial means, by which, when the proportion of bees to the brood is too small, the latter may readily be chilled to death, is more favourable to the outbreak of foul brood than natural swarming. We are, therefore, very careful that dead brood, especially such as is sealed over, should be removed as soon as possible from the hive, and buried deep underground, since the fungus, which may be already on it, readily grows luxuriantly in the open air."

In the highly valuable remarks of your esteemed correspondent, "R. S.," on Dr. Preuss's fungoid theory, with much of which I entirely agree, I am also pleased to notice that his views as to the origin of foul brood seem now to be almost identical with my own. In 1864 he stated, that though at first inclined to believe with me, that foul brood might originate in "chill," yet from certain experiments then related by him, he was constrained to say that—"1st, Foul brood is a real disease, and not caused by the brood getting chilled; and, 2nd, It is infectious." In 1865, after an experience of two summers of this pest, "R. S." expressed himself still more decidedly in support of these views. Notwithstanding all this, however, "R. S." has, ever since the commencement of the controversy, with a commendable zeal worked earnestly and perseveringly, by observation and experiment to discover, if possible, the truth, and we have now the results of these summed up in the

following sentences, which I quote from the article above referred to (November 12th, 1868), "A putrescent body is, no doubt, a fitting nidus for [fungus] sporules; and I do think that sealed-up larvæ, dying from whatever cause, and continuing unremoved, have much to do with the introduction of the foul-brood pest into our hives. It is in these putrescent bodies I believe the germ of disease is to be found." And again, "I have made several direct experiments with combs from which I had extracted putrid brood, which had been allowed to die of cold, and I have no hesitation in saying that healthy hives were tainted by their introduction." It is but right to state, that appended to these views is the following caveat:—"Notwithstanding all I have said, it is still possible that I may have been making use of previously-infected combs, in spite of the most painstaking examination."

In endeavouring, then, to arrive at the sentiments of apiarian writers as to the origin of foul brood, we find a growing belief that to the existence of decayed, abortive, and dead larvæ in the cells, killed by cold or heat (a matter, I think, of immaterial consequence), we may often, at least, trace the origin of foul brood. Bonner, though unable to satisfy himself, yet supposed it might be owing to extreme cold. Huish could not class "abortive brood" amongst the "actual diseases of bees," yet regarded it as the "cause of the death of a number of bees, if not the ruin of many hives, as it engenders a corrupted air in the hive, which is highly injurious to the bees." Baron von Berlepsch says of chill, "nothing is more likely" to originate foul brood; while Dr. Preuss especially, as we have already seen from his valuable paper, is most decided in his opinions on this head. And then we have the opinions of Mr. S. Bevan Fox and "A KENFLEWSHIRE BEE-KEEPER" (will the latter, especially, forgive me for classing him in this friendly category?), and, lastly, the opinions of my esteemed friend, "R. S.," the discoverer of Koehler's secret, referred to by "M. J.," May 21st, 1868, all more or less favouring the views that the presence of dead larvæ in any hive may give rise to evils which, if not timeously removed, may eventually terminate in extinction and ruin.

Now, in conclusion, let us assume it as a fact that fungi are found in foul brood, as Dr. Preuss asserts, and that dead and mouldering larvæ or chrysalids which have died of cold or other causes, and permitted to remain in the hive unremoved, offer a "particularly favourable soil" for the introduction of fungi; then, assuredly, we can see that foul brood originating from this cause cannot be said to originate in disease at all, as I all along contended, but from accident. Moreover, if it be admitted as a scientific fact that fungus is simply an effect and not a cause of disease, then it is evident fungus cannot, even in the most virulent forms of foul brood, be its anterior cause. But while it may be admitted further, that dead and mouldering larvæ do originate the foul-brood fungus, which when once introduced proves so disastrous in its effects, how are we to account for its introduction into other hives where these anterior causes had no place? Now, foul brood, though not originating in disease, properly so called, yet once produced, it may, by the putrescent miasma generated by it, so affect healthy larvæ subjected to its influence, as to create disease, the fungi finding in these affected or diseased larvæ a fitting soil, as well as in the case of dead larvæ, for their growth and propagation. Dr. Preuss himself, I think, acknowledges this view when he says, "I should define the difference made by Dzierzon between non-contagious and virulent foul brood as consisting in this—that non-contagious foul brood means the death of the larva from other causes, and virulent foul brood the death of the larva from foul-brood fungus."

The same view, I think, may apply to the supposition of foul brood being introduced independently of infection or the death of the larvæ from chill or neglect, such as by feeding with fermenting honey. Here, also, the larvæ may become affected and diseased by the deleterious food given them inducing the fungi to make a settlement in a soil equally suitable, it may be, as in the other case, and, consequently, leading to the same fatal results.

I do not intend to do more than simply throw out these few remarks with reference to Dr. Preuss's very interesting paper; for though I can myself see, according to the views I have here indicated, how his propositions may be reconciled and a consistent theory established both as to the origin and propagation of foul brood, yet I confess from my inexperience of its more aggravated forms, I may not be considered competent to pronounce authoritatively as to its various phases and modes of action, regarding which I notice a considerable divergence of

opinion, even among its most unfortunate sufferers. With its milder type, however, I have been long familiar, and every year when engaged in experimenting and artificialising processes of a certain character, have always sampled of it in my apiary.—J. Lowe.

SUPERPOSING.

I MET with a superposing case last week worth telling you. To keep together the population of a strong queenless hybrid stock in a set of Stewarton boxes unusually well found in stores, I procured from a cottager a stock of black bees whose straw hive was about one-third combed, and for store as light as a feather, their lives not worth a couple of days' purchase, being already in that weak lethargic state past feeding and preceding dissolution. To attempt uniting them to the strong colony in their then famished condition, I knew from previous experience was certain destruction. The plan I hit upon was this: I first opened and covered with perforated zinc a circular feeding space in the centre of the strong stock, and on the top of the stock put three rather massive pieces of honeycomb, over which I set the straw hive, closing its entrance and wrapping it well up. The strong heat rising from the Stewarton colony gradually resuscitated a few of the black bees, which crawled down to sip the honey, and they, being supplied, carried up and strengthened other workers to follow, till at dusk the weaklings' busy hum at work was delightful to hear. So, administering a little smoke to both stocks, I drew the slides of the Stewarton, whose brisk battalions went up at once and cheerfully fraternised over the unlooked-for New Year's banquet with their new-found allies. I looked for nothing else than that both parties would join in adding what honey remained to the ample store below, and so left them. Judge my surprise the other day, on raising the cover top of the united colony, and taking off a bit of cloth from the central aperture in the cottagers' hive, in case any odd bee might be parading its combs before removing it, to find, as I certainly looked for under the circumstances, the few combs in the one side entirely vacated; but, on the other hand, the abominable musty skep, more than twenty years old, was full of glittering Italians and their sable allies as closely as they could pack; from it I shall take care to forcibly expel the latter the first day my favourites are on the wing.—A RENFREWSHIRE BEE-KEEPER.

OUR LETTER BOX.

COCHIN CHINA PULLETS (M. E.).—You have had six eggs from five pullets every week in January. We do not think you have cause to complain; but we are sure the birds are overfed. We are opposed to allowing or weighing food for chickens. It is neither vulgar nor out of place to say a fowl is sometimes crop-sick and only so-so. At such a time abstinence is beneficial. In your own case you would not declare you would fast, but still have your meals put before you; yet that is the way you treat your fowls. Do not weigh nor measure; give as much as they can eat up clean and readily, and no more. We have no doubt your fowls are too fat internally. Lessen the food a little, and you will increase the number of eggs. Let no food lie about.

JAPANESE BANTAMS (Evesham).—The real Japanese Bantams are remarkable for very short legs, and as they carry their wings drooping, like a Sebright Bantam, their legs are invisible. Their tails are carried squirrel fashion, curling over the back till they nearly reach the head. They are yellow-legged, and not heavily feathered. Some are quite white; some have black tails and flights. For choice, the latter are preferred. The cock has a large comb, which is not upright. The Cochin Bantams are not Japanese.

TIME OCCUPIED IN POULTRY-KEEPING (M. Hill).—No one could assign the time required for the employments you name. Do what you consider your duty, and as no complaints are made, be not over-anxious about the future.

WHITE DORKINGS (M. H.).—Having feathered legs is certain evidence that they are cross-bred. In fact, with such legs they are not White Dorkings, but a mixture probably with White Cochin-Chinas.

POLISH FOWLS PLUCKED BY OTHERS (Lover of Poultry).—You must separate your birds till the topknots are quite grown. It is only while they are growing and there are bare spots that they are tempted to peck each other. Having begun, they will not leave off while the top-knots are growing. It facilitates the growth of the feathers on bare spots if they are rubbed with oil or sulphur ointment.

BAZIN FOR DUCKS (What you do, do well).—Your basin will do perfectly well. Ducks do not want much water. A great advantage in such a contrivance is that you can always have the water clean. We advise the Aylesbury Duck, but it is a non-eater. You will have to put the eggs under hens. Any covered place will do for the Ducks to roost. They do not want a large one, and require only a little straw. They are not much given to lay in any particular spot (we speak of the Aylesburies), they drop their eggs about; but if you can induce them to take to a spot, it is generally a corner fenced off by a low rail, as they are not clever in climbing. You can feed on oats mixed with bran, and it is more economical

to give their food in water, when they eat it all, than it is to throw it on the ground, when much is lost.

FOR EGGS ONLY (S. N.).—Where fowls are wanted for eggs only a cock is unnecessary. We do not think you will purchase the best nest eggs for less than 3d. Years ago we gave that for some, and we use them still. We bought some chalk eggs, and they were eaten or worn out in a few months.

FACE OF SPANISH COCK (Inquirer).—It is more than probable the hens peck the cock's face; the effect of this would be to turn it brown. If only the outer white skin be rubbed, it turns brown directly. The white face is only a "sac," covering the usual skin and flesh underneath. Rub the part with some emollient healing ointment, and separate the cock from the hens.

CRÈVE-CŒURS (Faversham).—We believe you may rest quite satisfied with your birds. The passions of birds are influenced by seasons and weather. Early in the year and in unkind weather a cock will attend only to three or four hens, and that so seldom that it will be rarely witnessed. At this time it generally takes place the first thing in the morning, the time when they are not much seen. The same bird later in the year will run satisfactorily with twelve hens, and ocular proof may be had of it at any time. We often receive seven or eight complaints at a time on this subject. We have several now, and hope this answer will satisfy them all. One, however, is anxious for what he calls "very full particulars." We will do all we can. Fowls were originally birds of season, and part of it remains in them; instance—that pullets only lay in the winter; they lay when they attain a certain age, but when they become hens, which is ever afterwards, they lay in season only. As this seldom occurs till the end of February or beginning of March, the cock is not required till then. This may, and we believe does, account in some measure for the apparent indifference of the cock in the winter.

DISEASED FOWLS AT AN EXHIBITION (Northumbrian).—We fully abide by the opinion we gave. If birds are proved to be diseased, and the Committee have not paid the prize, they would be fully justified in withholding it. In your case, you say the birds proved not to be diseased, and the Committee consequently paid you the prize, so no space need be occupied in considering the case.

SEXES IN PIGEONS, &c. (Ad.).—The cock may be known from the hen by his thicker neck and fuller face. The hen is more delicately shaped in the head, and has a less bold look. The cock coos more frequently, and longer and louder than the hen, turning often half round. When once Pigeons are paired they can be kept in the same house with others with perfect safety. The best practical book on Pigeons with which we are acquainted is "The Pigeon Book," by B. P. Brent, to be had free from our office for twenty stamps.

PIGEONS FROM THE COASTS OF THE MEDITERRANEAN (Ignoramus).—Barbs, African Owls, Runts, and we have seen good White Trumpeters from Egypt.

RABBITS (A Young Inquirer).—We cannot advise you which variety to keep, as we do not know what object you have in keeping them. If for kitchen purposes, we recommend the Belgian or Hare Rabbit. If you enclose seven postage stamps with your address, and order "The Rabbit Book" to be sent to you, you will have it by post, free of charge. In it are drawing and descriptions of the different varieties.

BEES DYING (Super).—The bees afforded no clue to the nature of the disease with which the hive is afflicted. If it is dropsy we know of no cure except that discovered by Mr. Woodbury, and described by him in page 534 of our ninth volume. If it is dysentery, the feeding necessary to save the stock from starvation is likely to be of service if not resorted to too soon. As, however, we have had but little experience of this latter disease, we shall feel obliged by the advice of any of our correspondents who, not having been so fortunate, may be better qualified than ourselves to offer it.

BREKSHIRE HIVE (A Young Bee-keeper).—We have no more information than that we printed in our last volume.

GREY AFRICAN PARROT (C. A. G.).—The cause of your Parrot being so thin is its not having sufficient nourishment. Give it hemp and Canary seed mixed, nuts, apple, celery, &c., and occasionally soaked Indian corn, biscuit dipped in tea, coffee, or beer; soaked bread, the water being drained off, and a little milk poured on the bread and squeezed; also give it a couple of small chillies daily, and if it will take water try a teaspoonful of rum in it. The swelling on the wing is caused either by weakness or by having struck the wing when falling, most probably by the latter. If the bird will allow you, take a piece of sponge and bathe the swelling with warm water once or twice daily, and the swelling will, no doubt, disappear. It is difficult to advise without seeing the bird; but if the swelling appears to have matter in it, we would suggest that it be lanced. The best peeling at the point is not unusual, and the age has no connection with it. It will come all right.

MUZZLE (A. F. N.).—Muzzles for dogs of all sizes are sold in London. They are straps buckling round the jaws and neck of the dog.

GOLD FISH DYING (A. of Hounslow).—The entire absence of sunshine sufficiently accounts for the mortality. Gold fish require abundance of light, and more warmth than our common native fish.

POULTRY MARKET.—FEBRUARY 3.

We have still to chronicle an unexampled depression of trade. The supply is not great, and choice goods are even scarce, but the demand is so small that prices do not rise.

	s.	d.	per d.		s.	d.	per d.
Large Fowls.....	3	0	to 3	6	0	to 3	0
Smaller do.....	2	6	3	0	0	to 1	9
Chickens.....	1	9	2	8	0	to 2	6
Geese.....	7	0	8	0	0	to 1	5
Ducks.....	2	0	2	6	0	to 0	10
Pigeons.....	0	9	0	10	0	to 0	0
Pheasants.....	2	6	to 3	0	0	to 3	0
Partridges.....	1	6	to 1	9	0	to 2	6
Hares.....	1	4	to 1	5	0	to 0	10
Rabbits.....	0	9	to 0	10	0	to 0	0
Wild do.....	0	9	to 0	10	0	to 0	0
Grouse.....	0	0	to 0	0	0	to 0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 11—17, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
11	Th	Meeting of Royal and Zoological Socie-	41.3	29.9	37.1	19	24 17	5 15	26 17	5 15	0	14 30	42
12	F	ities, 8.30 P.M.	44.8	29.7	37.2	16	22 7	7 5	51 7	9 6	1	14 29	43
13	S	Royal Horticultural Society, Promenade.	44.2	29.6	36.4	14	20 7	9 5	17 8	12 7	2	11 27	44
14	SUN	1 SUNDAY IN LENT.	45.5	30.6	38.1	15	18 7	11 5	39 8	16 8	3	14 25	45
15	M	Meeting of Entomological Society.	47.0	31.6	39.3	16	16 7	13 5	59 8	20 9	4	14 22	46
16	Tu	Royal Horticultural Society, Fruit, Floral,	46.9	30.7	38.8	11	14 7	14 5	20 9	24 10	5	14 19	47
17	W	Meet. of So. of Arts, 8 P.M. [& Gen. Meet.	46.5	30.7	38.6	17	12 7	16 5	43 9	31 11	6	14 14	48

From observations taken near London during the last forty-two years, the average day temperature of the week is 45.6°; and its night temperature 30.4°. The greatest heat was 59°, on the 16th, 1867; and the lowest cold zero, on the 13th, 1855. The greatest fall of rain was 0.50 inch.

ORCHIDS IN TUBS.



WHEN at Leeds the other day I was very much surprised to see a number of Orchids luxuriating in tubs. They were grown by Mr. L. Temple, gardener to W. G. Joy, Esq., of Headingley, in a vinery, and certainly no one ever saw such plants before. On a plant of the pretty *Lælia anceps*, 3 feet in diameter, I counted fourteen spikes of bloom, and on these forty-three fully-developed flowers. This being one of the best varieties, was exceedingly beautiful, and worth going a long journey to see. Mr. Temple seems to have a very happy method of treating this beautiful plant, for it was growing and flowering quite as freely as a *Pelargonium* or any other soft-wooded plant.

The following were also equally well grown—viz., *Cattleya crispa superba*, 4 feet in diameter, and which produced fifty blooms last year; *C. Harrisoniæ violacea*, 3 feet across, and which produced sixty flowers; *C. crispa*, 3 feet across, thirty flowers; *Odontoglossum grande*, 2 feet across, forty-one blooms, probably the finest plant in this country; *Dendrobium nobile*, 4 feet in diameter, four hundred blooms; *Miltonia Clowesii*, 3 feet across, one hundred blooms; *M. spectabilis*, 3 feet in diameter, forty-nine blooms; *Oncidium flexuosum*, 4 feet across, forty spikes; *Phajus grandifolius*, 4 feet through, thirty spikes; *Cypripedium insigne*, 3 feet in diameter, forty blooms. The above were all in tubs 1 foot deep and 2 feet 6 inches in diameter.

Besides the foregoing, I noticed in pots equally luxuriant specimens of *Dendrobium densiflorum* with fourteen spikes, and *Oncidium divaricatum*, with a spike 4 feet long, and the plant 2 feet through at the base. This was the size when the plant was exhibited at the Leeds Show last year, and it was undoubtedly the finest example ever seen of this pretty species.

The Orchids are treated just the same as the Vines. When the Vines are at rest, the Orchids are also allowed their season of rest, and when the Vines are started in the spring, the Orchids commence their season of growth. This system appears very simple, but it is, nevertheless, the right plan to adopt, and has enabled Mr. Temple to mature some of the finest Orchids ever seen, and to show the gardening world that they may be grown as easily as a softwooded plant, and at even a smaller cost; for the latter would require more attention during the winter than the Orchids. This, therefore, should encourage many who have been hitherto deterred from growing these beautiful plants in consequence of supposing the expense of fuel and labour to be too great; and when it is known that the mode of cultivation described is applicable to the lovely forms of *Odontoglossum*, such as *O. Alexandræ*, the blooms of which will remain in perfection for three months, retaining for the greater part of that time their delightful fragrance, a commencement should at once be made. With treatment such as Mr. Temple gives them, and with an equal amount of care, they may soon be made large plants. The follow-

ing is a list of Orchids that would do well under similar treatment:—

<i>Odontoglossum</i>	<i>Alexandræ</i>	<i>Lælia majalis</i>
<i>Bluntii</i>		<i>superbiens</i>
<i>citrosimum</i>		<i>Epidendrum amabile</i>
<i>cordatum</i>		<i>aromaticum</i>
<i>cristatum</i>		<i>macrochilum</i>
<i>Dawsonii</i>		<i>macrochilum roseum</i>
<i>gloriosum</i>		<i>vitellinum</i>
<i>Lindleyanum</i>		<i>vitellinum majus</i>
<i>Pescatorci</i>		<i>Disa grandiflora</i>
<i>Pescatorei splendens</i>		<i>Cypripedium insigne</i>
<i>nævium</i>		<i>Maulci</i>
<i>nebulosum</i>		<i>Schlimii</i>
<i>phalænopsis</i>		<i>venustum</i>
<i>pulchellum</i>		<i>Dendrobium chrysanthum</i>
<i>pulchellum grandiflorum</i>		<i>Egertonii</i>
<i>radiatum</i>		<i>Hillii</i>
<i>Warneri</i>		<i>speciosum</i>
<i>Uro-Skinneri</i>		<i>Anguloa Clowesii</i>
<i>Oncidium crispum</i>		<i>Ruckeri</i>
<i>bifolium majus</i>		<i>uniflora</i>
<i>incurvum</i>		<i>uniflora superba</i>
<i>leucochilum</i>		<i>Arpophyllum giganteum</i>
<i>ornithorhynchum</i>		<i>Barkeria spectabilis</i>
<i>serratum</i>		<i>elegans</i>
<i>Pleione humile</i>		<i>Lindleyana</i>
<i>lagenaria</i>		<i>Skinneri</i>
<i>maculata</i>		<i>Cattleya citrina</i> , and those
<i>Wallichiana</i>		previously named
<i>Trichopilia tortilis</i>		<i>Cologyne cristata</i>
<i>Maxillaria venusta</i>		<i>cristata major</i>
<i>aromatica</i>		<i>speciosa</i>
<i>Harrisonii</i>		<i>Cymbidium eburneum</i>
<i>Masdevallia coccinea</i>		<i>giganteum</i>
<i>Lycaste aromatica</i>		<i>Hookerianum</i>
<i>cruenta</i>		<i>Mastersii</i>
<i>Skinneri</i> , many varieties		<i>Brassia verrucosa</i>
<i>Lælia alba</i>		<i>Brassavola glauca</i>
<i>acuminata</i>		<i>Zygopetalum Mackayi</i>
<i>autumnalis</i>		<i>maxillare</i>

To the preceding list many other species might be added.—J. WILLS, F.R.H.S.

PEACH CULTIVATION.—No. 7.

PROTECTION.—The blossom, young fruit, and foliage of the Peach and Nectarine are liable to be injured by frost. Nothing answers so well for protection as coping boards. A wall having copings that project 11 or 13 inches will be considerably warmer than one having only an ordinary stone coping, for the heat accumulated in the wall during the day will in the latter case be abstracted by cold air coming in contact with the surface of the wall, and that cold air becoming heated, will ascend, and its heat will be lost to the trees; wide projecting copings, on the contrary, obstruct the ascent of the warm air, which consequently accumulates at the wall, and the latter is not so soon cooled. The copings will need to be supported by iron brackets, which

are best leaded into the coping of the wall, and to these the boards are to be secured with broad-headed iron pins. The boards should be placed on the upper side of the brackets, which, if the wall coping is not sufficiently strong, must be driven into the wall, and the boards placed upon them. It is well, however, to have the coping boards hinged, and where there are good stone copings the brackets, by having a joint, will answer both purposes; but in most cases the boards may be hinged, hooks being leaded into the coping, and strap-hinges employed the same as for cross-bar doors. The boards when hinged can be folded up when the weather is mild, and let down when cold, and after May should be removed altogether. Whether hinged or not they should not be used until the blossom shows colour, and they ought to be removed when danger from frosts is past. These copings should incline to, and not fall from, the wall.

Coping boards alone are not sufficient protection from spring frosts; other protection must be given, and the best material is thin canvas. Woollen netting is also good, and so is tiffany. The material, whatever it be, should be prevented from brushing against the blossom by means of poles, and is best kept at from 9 inches to a foot from the trees. If there are wood copings, it may be fixed to them; if not, the material must be fixed immediately under the coping, and may fold or roll up and down. There will not be any necessity for the covering until the blossoms are so far expanded as to show colour; but when the season is very mild, and the blossom buds are swelling at a very early period, it may be well to employ the covering to keep off the sun's heat. In that case the coping boards must not be employed, but ought to be folded up day and night, and the material should be suspended from the brackets; it being thus about 1 foot from the wall, the sun will be kept from heating the wall, and there can be no accumulation of heat, as that will escape at top and bottom. The material need not reach nearer the ground than 1 foot. A judicious employment of the protecting material in this way will keep the blossoms from undue excitement or will retard them, and they will, perhaps, escape, or be better able to endure inclement weather very often succeeding a mild period occurring at an early season.

If the weather be mild and the sun so powerful in February, and sometimes in January, as to cause the swelling of the buds and their premature expansion, the covering or protection should be let down or placed over the trees by day, and drawn up or removed at night; whilst to protect the blossoms from frost in March and April, and the young fruit and tender foliage in April and May, the material ought to be placed over the trees before 6 P.M., and should be removed by 8.30 A.M. or earlier, according to the state of the weather, it being in no case removed as long as the temperature is below 35°. Even in the day, if frost prevail, the covering should not be withdrawn, nor on foggy, cold days; but whenever the weather is mild no covering will be needed night nor day, and, as a rule, the less protected the trees the less susceptible they will be of cold; at the same time protection must be given when necessary, the material being always in readiness for placing over the trees, to ensure the safety of the blossom and fruit from frost. The coping boards should be left on day and night after the blossoms show colour, unless it be desirable to retard them; but when the bloom is expanded no good results from retarding, therefore allow the coping boards to remain down after that period until their final removal at the end of May.

WATERING, SYRINGING, AND MANURING.—For the successful cultivation of the Peach, the trees must be in a proper condition as regards moisture at the roots. A want of moisture in the soil is a frequent cause of red spider, and of the fruit being small and not arriving at perfection. To guard against a deficiency of moisture in the soil, it should be examined before the flowers expand, and if not moist give a good watering; if the water does not enter the soil freely, as will be the case when the surface is hard and the border slopes considerably, the soil may be forked into ridges, filling and refilling the hollows with water until the border is thoroughly moistened to the bottom, and when the top has dried the surface ought to be levelled. After the fruit is set and commencing to swell, water will be required; the border should, therefore, be frequently examined from that time until the fruit commences to ripen, and if the soil is dry water must be given in sufficient quantity to reach the lowest roots. The last watering may be applied when the fruit commences ripening. Liquid manure may be applied, but not in driblets; a good soaking should be given after thinning the fruit, or when it is well set, another

when it is half grown, and a third when it begins to swell for ripening—that is, early in May, the middle of June, and the end of July or beginning of August, are good times for the application of manure water, good soakings only being given. Do not wait till the leaves droop and lose their deep green hue before applying water, for it is vain to expect the yellow-tinged foliage to assume its former freshness—the water must be given before that state occurs.

The trees having been properly attended to with water at the roots, the necessity for syringing will be lessened; still, it is very beneficial, and I may say essential. It should begin before the flowers expand, and only cease after the fruit begins to ripen. Before the flowers expand syringing should apply not only to the trees, but to the whole wall, and should be practised at least once before the flowers open, but better twice, and one of these syringings should be with some anti-aphis solution. Clarke's compound, at the rate of 1½ oz. to the gallon of water, is excellent for this purpose. The nights at this early period being cold, the syringing should be practised early in the morning, before the sun has attained much power. Whilst the trees are in blossom syringing must be discontinued, but resume it when the fruit is set and begins to swell, operating in the morning only, except in warm periods, until danger from frost is past; then the syringing should be in the afternoon, and not before 4 P.M. By keeping the soil moist and syringing frequently in dry weather (it will not be required in moist weather), we secure a good growth and healthy foliage; on these depend well-grown trees and large fruit.

With regard to manure, mulching from the stems of the trees, outwards as far as the roots extend, with fresh cow dung as free of straw as possible, and put on an inch deep in February, will be very beneficial, by preventing evaporation and enriching the soil. In April a little fresh loam may be placed over the manure, or lightly forked in if the roots allow, and then trodden firm, and if it can be had strew soot over the border, so as to render it quite black.

FRUIT RIPENING AND GATHERING.—In some localities it is a practice to cut off the leaves, or shorten them, so as to expose the fruit to the sun. This, in my opinion, is more injurious to the future well-being of the trees, than beneficial to the present crop. The foliage, when this is necessary, is too plentiful, either from the shoots being too close or from neglecting to stop and disbud. In cold localities, and cold late seasons, however, the leaves may be turned aside so that they may not unduly shade the fruit. It attains a better colour and flavour when this is done, which is all I recommend, for if the crop will not ripen without the tree being deprived of foliage, the climate is too cold, and the fruit will never be otherwise than mealy and worthless, or it would ripen quite as well with as without the leaves, and I have proved better.

Various instruments have been invented for gathering the fruit, but the best means is the hand. The fruit should be taken in the hollow of the hand, and the soft parts of the fingers will embrace the part of the fruit next the wall. It will, if ripe, part from the tree easily with scarcely any pressure, and the little there is being equally divided no part will be bruised. A ripe fruit is easily known by the part next the wall, or that which is shaded, being green in an unripe fruit, but when ripe it becomes of a yellowish tinge. Peaches are best gathered in the forenoon, but may be gathered in the heat of day without loss of flavour. An old way of gathering Peaches was to have a net with half or three-quarter-inch mesh fixed near the ground, one edge being fastened to the wall and the other to stakes driven in the ground so near the wall that the net would be slack, and form a sort of furrow or bag. The fruit in this case fell into the net of its own accord when ripe, and from the net being slack it was caught without being injured, and though birds would soon spoil fruits finding their way to the ground, they never touched those hanging in the net. The fruit will fall as soon as it is ripe unless held between two shoots, and such fruit is vastly superior to that gathered by hand. A ripe Peach requires very careful handling, being easily bruised.—G. ABBEY.

CULTURE OF THE TRUFFLE.

THE following notes of M. Chatin's discourse at yesterday's Feb. 5), meeting of the "Société Impériale d'Acclimatation," will probably interest the readers of THE JOURNAL OF HORTICULTURE.

M. Chatin, who has long been studying the subject, and just

returned from a scientific journey throughout France for that particular purpose, told us that the Truffle is by no means confined to any particular localities in France, although certain districts, such as Perigord, have long since acquired a great fame for its production. The Truffle is to be found here and there in by far the greater number of the "departements" as far north as Paris, which is about its most northern limit; and, as a general rule, "*wherever the Vine will grow it will grow also.*" The only *sine qua non* of its existence is a calcareous soil; the more so a soil is the more suitable it is to the Truffle, and *vice versa*; in siliceous, argillaceous, or other soils containing no limestone, the Truffle is never found, and will not grow. Throughout those districts where the Truffle is cultivated, either the Evergreen Oak or the Pubescent Oak (*Quercus cerris*), is made use of. In the northern zone, where the Evergreen Oak will not live, the Pubescent Oak is that used.

The acorns are sown in rows about a yard asunder, each row from 10 to 13 feet apart. At the end of the third year the Truffles begin to appear, and such Oaks as are without them are the first chosen for thinning-out. A great essential in the cultivation of the Truffle being plenty of light and air at the roots of and around the Oaks, according as the trees grow these must be thinned out. A circular space, destitute of grass, and exhibiting a peculiar dryness and friability of soil, is the sure sign of a Truffle bed; this circle widens as the tree grows and its roots are protruded further from the trunk; so that the Truffles, which with the quite young tree may actually be found under the stem, will on the old one be several yards from the trunk. The Truffles follow and are co-existent with the radicles and spongioles—in other words, with the extremities of the roots; and if the tree be close to others on any of its sides, they will always be found on the open side—that most exposed to the air. Notwithstanding this, from his own experience and from the opinions of all the best Truffle-growers, and in fact from the universal opinion of all countryfolk acquainted with the subject, M. Chatin has come to the conclusion that all theories of the Truffle being either a parasite on the Oak roots, or the work of a fly on the roots of this tree, are wholly fallacious. As a rule, the Truffle is never in contact with the roots—as an exception a rootlet may be found embedded in one, but it has no physiological part with it, and is merely enclosed accidentally in the growing tubercle, as a straw, a stone, or any other extraneous body might be; and he here mentioned the case cited in Pliny of a Roman emperor, who broke one of his teeth, while eating a Truffle, against a coin embedded in it.

M. Chatin calls the Truffle a Mushroom, having all the component parts of a true plant, and also bearing seed; but he positively declares that the Truffle never has been propagated by planting either pieces of or whole Truffles; that these will never increase in size, and never produce others; that the only way to cause Truffles to grow where they never grew before, is to sow the acorns of an Oak having had Truffles growing at its base. How the Truffle is propagated through the acorn he did not pretend to say, but such was the fact. This is the mode of culture followed by hundreds who make a handsome living by it, and by which poor bad land, hitherto yielding barely 30 francs, by sowing here and there a little barley, now regularly yields 800f. and more of Truffles annually. M. Chatin confined himself entirely to Truffles in France, but it is to be presumed that the same rule as to climate and soil would hold good as regards any other country.—FREDERICK PALMER, *Versailles*.

PACKING FRUIT.

My system of packing Grapes in large quantities is to secure a strong hamper, well-line the inside with paper, putting a coat of moss at the bottom, and cover with thin tissue paper. I then pack the Grapes in firmly without paper, cover the first layer with paper, gently press down dry moss, and run some sticks over the top through the hamper. Let the sticks be inserted so that the bottom layer cannot move; then proceed with another layer. Grapes thus packed have been sent from one of the midland counties to the London fruiterers without a complaint. Packing the bunches closely together does not deface the bloom so much as wrapping in paper.

For packing Peaches, I had a box made with trays to lift out; one tray would hold two dozen Peaches, and there were partitions to divide each Peach from the rest. The fruit was wrapped in silver paper, and packed round with wadding. The wadding will last a long time. I never had a complaint of a single fruit being damaged.

Strawberries I pack in the same way as Peaches, but without divisions in the trays, and I wrap each fruit in a Strawberry leaf. For Pines I have boxes made with two divisions to hold three fruit.—J. C. M.

THE ROYAL HORTICULTURAL SOCIETY'S ANNUAL GENERAL MEETING.

ANOTHER horticultural year has past, and a new one begun—begun, we trust, in circumstances of not less hope, but a great deal more cheering, than have characterised its two predecessors. The great calamities that paralysed the commercial prosperity of the country, and brought ruin and penury to many a household, necessarily affected the interests of all things horticultural, as well as every other that partakes more of a luxury than a necessity. All commercial horticulturists can testify to this fact, and what affected them, and affected kindred institutions to a far greater extent, has made its impression on the Royal Horticultural Society.

It is gratifying, however, to know that the extent to which this has operated has been in a great measure of a trivial character, when we consider the alarming deficits in the revenue to which the Society was not so long ago obliged to submit, and which filled the stoutest-hearted Fellow with alarm. By the statements of the balance-sheet, which we publish in a subsequent page, it appears that the balance against the Society is £1179 5s. 10d., from which is to be deducted £945 of good assets in the form of subscriptions and garden produce not paid, leaving the deficit on the year £234 5s. 10d., a very modest sum certainly when all the circumstances are considered.

Returning prosperity has already set in, and it may be reasonably expected that it will reach all horticultural interests. We hear from nurserymen on all hands that "they never were so busy." If, then, the change has already begun, we cannot doubt but that the Society will this year recover what it has already lost, and add a great deal more.

In the Council that has been elected we have a reasonable guarantee that the *prestige* of the Society is not on the wane, and that its affairs will be administered with that prudence and judgment which alone can insure success. The election of Prince Teck, and His Serene Highness's consent to serve not only as a member of Council, but as a Vice-President, are evidence not only of the interest that he takes in the Society's welfare, but also of a continuance of the warm attachment his Royal Consort has always manifested towards everything tending to its prosperity. We cannot doubt but that the new bond will secure even more frequent visits of Her Royal Highness to the shows and meetings of the Society, to which her cheerful presence contributes so much. Lord Lonsborough is one more addition that will give strength. His Lordship's well-known devotion to horticulture, and especially to Orchid culture, recommends him as a very fit member of such a body; and in Mr. Dix the Society has the satisfaction of hailing the return of one of its most tried friends.

The only subjects that came up for discussion on Tuesday were some remarks made by Mr. Godson on the general management of the Society. He did not make any special allusion, nor objected to anything in particular, but merely counselled caution. Mr. Godson stood as signalman, exhibiting the green light. Happily the days are gone when green lights are needed; but Mr. Godson did good service at a time when a red and not a green light was the signal. Dr. Masters made some observations on the infrequency and irregularity with which the Journal appeared, a subject which many of the Fellows regret. But looking at the cost attending the production of previous Journals, the few who really read them, and the facilities and rapidity with which the Society's proceedings are reported in this and other public papers, the Society may be pardoned for exercising, during a period of great depression, a prudent economy in this matter. We shall be delighted to see the time arrive when the Council will see their way to resume the regular and frequent publications of a Journal which shall be worthy of the Society; but rather than have a fitful organ which no one ever knows when it may be expected, or when it may be defunct, better have none at all, and be satisfied with things as they are. The Council might have, it is true, kept up a Journal during the past year. There was abundance of matter of great horticultural interest wherewith to fill it; but the production of it would have added a good £300 to the year's deficit. There is

nothing but the bare annual income now to draw upon. If any Fellow can devise means for increasing that, even by the amount of the cost of the Journal, we have so much confidence in the Council that we believe their first endeavour would be to produce it.

THE Annual General Meeting was held on the 9th inst. in the Council-room at South Kensington, James Bateman, Esq., F.R.S., in the chair. There was a very scanty attendance of the Fellows.

THE CHAIRMAN said that he had to express his regret that in consequence of the absence of their noble President, the Duke of Buccleuch, who was unable to attend owing to his absence in Scotland, he (Mr. Bateman), had been asked to preside. He observed that the gathering was not very large, and he supposed, therefore, that the business was not very important, so that there would be but very little for him as Chairman to do, but that little he would strive to perform to the best of his ability [hear, hear]. The first duty he had to perform was to have the advertisement convening the meeting read by the Assistant Secretary.

Mr. RICHARDS (the Assistant Secretary), then read the advertisement convening the meeting, and the minutes of last Annual General Meeting, which were approved and signed by the Chairman.

THE CHAIRMAN then said that he presumed they could not do better than follow the precedents of former years in the appointment of scrutineers to take the voting papers for the Council and the officers. While the scrutineers, Mr. Robert Fortune and Mr. W. Beattie Booth, were ascertaining the result of the votes of the Fellows, the Assistant Secretary would proceed to read the Report.

Mr. RICHARDS then read the Annual Report, which is appended.

The Report of the Auditors was then read.

Mr. E. S. DALL begged to move that the Report be received and adopted.

THE CHAIRMAN presumed that some gentleman in the body of the room would second the motion.

Dr. MASTERS said that before the resolution was put he wished to ask a question as to one of the matters referred to in the Report. That to which he referred was the fifth paragraph, which ran thus:—"The Council are now making arrangements by which reports of the experiments conducted at Chiswick, and of the transactions at the various Committees, can be obtained by the Fellows without the delay which the present form of the publications of the Society has hitherto necessitated." That had been a great question, and it was quite proper that at last there should be some regulation as to the more systematic publication of the Journal. Now, he (Dr. Masters) considered that there were two classes of the Fellows of the Society who were interested in its operations—those who took a direct interest in it, and those whom he must call, and who were a totally distinct class, the dilettante, and who, though they took a less direct interest, were still a most important section of the subscribers. To neither did the present mode of publication of the Journal commend itself, its intervals were uncertain, and at much wider periods than they ought to be. He (Dr. Masters) did not intend, and he was sure the Fellows of the Society had not a word to say against the general aims, of its intelligence, its tone, or its Editor; but the complaint was that they got it at no regular times, and it was with pleasure that he saw the Council had taken the matter in hand, and he should be glad, indeed, to hear that there was a probability of the Council being able to carry out some plan of supplying more regular and frequent information. He had no doubt he should be told, as he had been told before, that it was a question of expense, and the Council would raise the cry of *non possumus*. But they ought to consider how the present mode affected the Society. They must look at it in a business point of view, and everybody knew that in private life they were obliged to make an outlay on which they got no direct return—to use a trite though somewhat vulgar phrase, they must "throw a sprat to catch a herring," and he (Dr. Masters) felt sure that if the Society were to do so in the more regular and frequent publication of their Proceedings, it would benefit the coffers of the Society. He begged to ask what the arrangements were which the Council contemplated or were making with regard to the more systematic and regular publication of their reports as suggested in the paragraph of the Report to which he (Dr. Masters) had referred [hear, hear].

Mr. W. WILSON SAUNDERS could only assure the meeting that the Council felt with Dr. Masters that the publication of the Proceedings of the Society had not been what it ought to have been, but he (Mr. Saunders) could not say what it was going to be. But what he could say in reply to Dr. Masters, was to tell him and the Fellows what they wanted, and would try to do, and were trying to do. He could only say that the Publication Committee had met that day, and were trying to carry out some plan such as he (Mr. Saunders) would sketch out. At present there were, generally on the Tuesday, during five or six months of the year, meetings of which the proceedings should be reported weekly, but for the rest of the year it was thought that a monthly report would suffice. It was, therefore, proposed that the business which was brought forward at the Scientific Committees, the Floral and Fruit Committees, should be immediately after the meetings prepared, so that it might be edited by Mr. Berkeley and brought into such a form as to be ready for distribution to the members of the Society on the next Tuesday after the business had taken place. The result of that arrangement would be that throughout the summer

the Fellows would have about every Tuesday the record of the business of their Committees—the Scientific Committee, the Fruit Committee, and the Floral Committee [hear, hear]. There would be, of course, a number of papers read, and a great deal of valuable information given, and the Council hoped that the plan which they should propose would have the desired effect that it would be adopted by the Society, for they (the Council) should not wish to propose more than they hoped the general body of the Fellows would agree to. They had a gentleman before them who had taken a very great interest in the matter, and had given them the benefit of his experience in such matters. The Council believed it could be carried out. They would be glad to effect the publication of the Proceedings as he (Mr. Saunders) had suggested, but they were hampered by want of means, which, however, it was hoped would be forthcoming, and he only expressed the view of the Council, in conjunction with his own, that the plan proposed would be satisfactory to the Members of the Society [cheers].

Mr. R. PLUMEE begged to second the motion that the Report be adopted.

Mr. S. H. GODSON was not sure that he understood the Chairman correctly when he stated that the meeting was not so important as many previous ones had been, but he (Mr. Godson), thought that the Annual Meeting was the most important one of the year. The speaker, who was hardly audible, was then understood to refer to the large balance of £1179 against the Society, and to express his fear that they would be worse off than ever, and, like their predecessors, have a hopeless deficit. He thought the Report ought to have had something in it more satisfactory, and those who had incurred the expenditure were responsible for the Report. He had gone through the Report as well as he could, and the accounts, which they had all had an opportunity of doing, and he thought the reason of that balance should have been stated. It was true he found an item of "Subscriptions unpaid, 1868, £1000, valued at £500," but the deficiency he thought showed a great laxity on the part of the Society, and proved that they were in the same position, or fast drifting towards it, as they were in 1855, when they were overwhelmed with debt, and it seemed to him that the question really was whether they should not put their shoulders to the wheel, and by some means turn that deficit into a balance in their favour. He was sure it would be very gratifying to the Fellows of the Society to see such a wholesome state of things brought about, and the Council must be equally pleased when they come to consider the matter. It was true, as he (Mr. Godson) had heard it said since he had been in the room, that it was not so bad as it might be, but he thought it need not be so bad as it is [a laugh]. He thought the accounts were not kept in a satisfactory way, and it was all very well to have a gentleman to draw upon; but if he, the Treasurer, had been there he would have told the meeting how much there was in the bank, how much they owed the bank, and the amount of unpaid liabilities. That was what ought to be shown on the face of the accounts, and he (Mr. Godson), knew that when he was last there the whole thing was so incomprehensible to him that he forbore from coming to the meeting. He hoped, and had no doubt, that some gentleman there would, as of old, give him a lecture, but he thought in a case of that kind the Council should at the outset of the Report, while they said that "The action of the Society during the past year has been gradually settling into the course which greater knowledge and experience have shown it advisable to follow," have shown how they meant to meet the difficulties of not having funds, and call upon the Fellows to put their shoulders to the wheel and come forward as they had done on previous occasions. He must further be allowed to say, that he did not consider it the most respectful thing that could have been done to invite a member of the Royal Family to become one of the Council when the Society was in such a bad state, but rather when they were in a flourishing condition and could carry out the objects of the Society with more satisfaction and vigour. In saying what he had he would only remark, that the Annual Meeting was the only time when the general body of the members had any opportunity of saying anything; and he hoped that the Council would earnestly consider the present position of the Society, and do something to remedy the existing condition of things.

Lieut.-Col. SCOTT begged to remark, that when Mr. Godson found fault with the Council he should, in his complaint, remember that when they talked of the accounts as Mr. Godson phrased it, it should be remembered that "the action of the Society" referred to the scientific portion of its operations. The Council had not referred in any way to the monetary position of the Society, or said that they were in a flourishing state; but they had not been unmindful of the general body of the Fellows as Mr. Godson would wish to lead the meeting to believe, for it was put fairly and frankly before the meeting in the Report that "the Council have, however, refrained from diminishing the amount of prizes offered, from a desire not to lessen one of the favourite enjoyments of the Fellows; for although the Society still suffers from the effects of the commercial calamities of 1866, the Council regard this depression as temporary, the actual decrease in the number of Fellows being only eight." [hear, hear.] What more did Mr. Godson want? The Council had been referred by him to the state of the Society and its funds, and they (the Council), said clearly that they were suffering from the effects of the monetary depression of 1866; and when he blamed them for not getting in the subscriptions, he (Col. Scott), could tell them of one Society where they were £3000 in arrear, while in their own (the Royal Horticultural Society), they

had only a deficit amounting to £1000. And if Mr. Godson in a spirit of fairness had looked at the receipt side of the account, he would see that the amount of annual subscriptions was £7000 and rather more, while in former years, if he referred to the statement of accounts, he would find it had been rather over £8000 [hear, hear]. That fully accounted for the deficit of £1000; and he (the speaker), could only point out to the meeting that if the Society had been as lucky last year as they had been in previous years, they would be out of debt, a state of things which most certainly did not exist when Mr. Godson was on the Council [hear]. But even if the Council had not stated the actual condition of things, were they to be so blamed as they had been? It might well be that the Council did not wish to tell the public that the Society was altogether in such a bad state, when in reality it was not so bad as Mr. Godson seemed to desire to make out. But he (the speaker), maintained that the Council had stated the facts truly—"that although the Society still suffers from the effects of the commercial calamities of 1866," yet that they only regarded that "depression as temporary." That the Council had stated in their Report, and what could they do more? [hear, hear].

Mr. GODSON wished to say one word in explanation. When he sent in his resignation as a member of the Council, there was the sum of £10,000, which went like chaff before the wind.

Mr. KINNEAR called the attention of the Council to the difference of privileges which the two-guinea subscribers enjoyed as compared with the four-guinea subscribers, the latter having two transferable tickets, whilst the former had one ticket not transferable. He thought that if the two-guinea tickets were made transferable, considerable benefit would accrue to the Society. He knew a great many who would subscribe, and would bring in others if the privileges were extended. He hoped the Council would give the matter their best consideration.

Mr. G. F. WILSON, F.R.S., said in reply to the gentleman who had just spoken, that the subject had been several times before the Council, and they had given it their very best and most careful consideration. As far as the Council could ascertain there was no doubt that any alteration of the existing rules as to the privileges would cause the loss of a great many four-guinea subscribers, who would pay the two guineas only if the privileges were made so nearly equal, and that loss of subscribers the Society could not at present afford.

Mr. KINNEAR could only say that he knew they lost a great many two-guinea subscribers they would otherwise have.

The CHAIRMAN said, that before he put the resolution which had been moved by Mr. Dale and seconded by Mr. Plumbé, "That the Report be received and adopted," he wished to make one or two remarks. When at the opening of the meeting he (the Chairman) said, that the meeting was not so important, it was judging from the paucity of the attendance, which was generally very much greater or less according to the amount of importance attached to the subjects which were likely to be discussed by the members. If the Society was supposed to be in difficulty, or in hot water, or schism existed, then there was sure to be a very large attendance [cheers and hear, hear]. He (Mr. Bateman), was not aware when he took the chair that their friend Mr. Godson was present, and they had been favoured with similar remarks from him which they were accustomed to have when he came amongst them before. He had renewed on that occasion the annual strictures which were certainly at times most exceedingly painful, but at the same time very useful. Many of them undoubtedly had given a form to the views of the Council, and led them into a direction which they would not otherwise have gone into. The meeting over which he (Mr. Bateman), now had the honour of presiding would be able to form some estimate of the sort of difficulties which the Council had to contend with. On the one side their friend Dr. Masters found fault with their Journal, and desired to have that done which would involve a very large additional cost, because one of their chief difficulties arose from the opposition their Journal experienced in the skill with which Dr. Masters conducted his paper. They could not pretend to have the intelligence flashed from every quarter of the globe from agents scattered through the length and breadth of the land. If the Society were to strive for such information they would have indeed to dispend their funds with a liberal hand. On the other hand, they had Mr. Godson rebuking them for a too lavish expenditure. All that the Society could do was to steer an even, an independent, and a prudent course. All that he (the Chairman) could say, and he was entitled to say, was that the Society had made steady progress, and it was only the money question which was the great difficulty. The Council had not been unmindful of the interests of the Fellows, and as he (the Chairman) believed, the members had not withheld their confidence from them. That such was the fact would be found in the circumstance that the three additional members of Council recommended by the Council, as proposed to be added, had been elected unanimously by the General Meeting [hear, hear]. The Chairman then referred to the honour conferred on the Society by having the name of his Serene Highness the Prince Teck enrolled in their Council, and if his Serene Highness had only half the love for flowers which the illustrious lady whom he had been fortunate enough to win for his wife had always shown, and the same interest in the Royal Horticultural Society, it would be a glad day for them when his Serene Highness had been made one of their Council. He (the Chairman) must also refer to the election of Lord Londesborough, and could not avoid mentioning a small circumstance which he had

observed recorded in a newspaper. Having taken up *Bell's Life*, he there saw Lord Londesborough referred to, and they referred to the growing taste the noble lord had exhibited for flowers and gardening regretting and fearing that one who had been so zealous a sportsman would soon take more interest in his Orchids than his horses [hear, hear]. However much that might grieve *Bell's Life* and the sporting fraternity, the Horticultural Society would have reason to rejoice [hear, hear]. The Chairman then put the question, and the Report was received and adopted unanimously.

The CHAIRMAN next announced the result of the voting to be, that the following were chosen to fill the ordinary vacancies in the Council (in the room of Right Hon. Lord Henry Gordon Lennox, M.P., Mr. B. T. Brandroth Gibbs, and Mr. Sigismund Ricker, F.L.S.):—H.S.H. The Prince Teck, Lord Londesborough, and the Rev. Joshua Dix.

The ballot for officers resulted in the election of the following gentlemen:—President, His Grace the Duke of Buccleuch, K.G.; Treasurer, Mr. John Clutton; Secretary, Lieut.-Col. Scott, R.E.; Expenses Committee-men, Mr. John Clutton, Lieut.-Col. Scott, R.E., and Mr. Henry Cole, C.B.; Auditors, Mr. James Nicholson, Mr. John Gibson, and Mr. Robert Hudson, F.R.S.

The CHAIRMAN then announced that the next meeting would be one of the usual Tuesday meetings, and held on Tuesday next, the 16th instant.

Mr. WILSON said that before the meeting separated he wished to be allowed to state to those Fellows who were interested in fruit-growing, especially in pots, that an orchard house had been erected at Chiswick, and it was not generally known that access could be had, by one of the new lines of railway from Kensington, to a station within ten minutes' walk of the gardens.

Mr. EDGAR BOWRING, M.P., then proposed a vote of thanks to the Chairman, and congratulated the Council on the position of the Society.

Mr. J. B. REDMAN seconded the vote, which was unanimously carried.

The CHAIRMAN in returning thanks expressed his gratification at the kindness and appreciative feeling of the meeting.

REPORT OF THE COUNCIL TO THE GENERAL MEETING.

1. The action of the Society during the past year has been gradually settling into the course which greater knowledge and experience have shown it advisable to follow. Like their predecessors, the present Council have felt that there were two prominent objects which it was essential that they should keep steadily in view. 1, The advancement of the science of horticulture; and 2, The improvement of the practical gardener.

2. For the improvement of the gardener, they have, as the Fellows are aware, established a course of practical teaching at Chiswick, where, in addition to the ordinary and higher branches of gardening, the students or pupils are instructed in the elements of drawing, land surveying, and chemistry. In conjunction with the Society of Arts, the Council have also instituted examinations for gardeners in botany and horticulture, of the results of which they are happy to be able to report favourably. The certificates gained at these examinations are highly prized, and are eagerly contested for by gardeners from the best establishments in the country, including the Royal Gardens at Kew; and it is gratifying to the Council to observe that the students in the garden at Chiswick have generally taken a creditable position in these examinations.

3. The advancement of horticultural science, although still more important, is a less tangible object. The best means which exist for the purpose, and are available to the Society, seem to be the encouragement of free intercommunication of ideas between men interested in horticulture or in kindred subjects. Hitherto the efforts of the Society in this direction have been chiefly limited to facilitating such communication between those who are specially devoted to horticulture. Fellows know that with this object the Fruit and Floral Committees have been established, Chiswick Directors, and a Botanical Adviser appointed, and the Tuesday meetings with lectures held; and by these means a great amount of scientific horticultural work is done, and much useful information disseminated. It appeared to the Council that a committee of a more mixed character might possibly be of service to the other committees, and to horticulturists generally—by eliciting information and suggestions from men who, with a common love of plants, were yet more specially devoted to some other branch of science which had either a direct or indirect bearing on horticulture. With this view they organised a Committee consisting of men of science generally, and they have to report with satisfaction that many men of the highest scientific eminence attend its meetings. The Society has thus now, in addition to the special Horticultural Committees and Staff, a Scientific Committee, in which systematic botany, vegetable physiology, agriculture, chemistry, geology, meteorology, and entomology are ably represented.

4. This Scientific Committee sits on the same days as the Fruit and Floral Committees; and, besides giving advice or opinions upon subjects referred to it by them, it has discussed a number of important questions, and suggested experiments for the elucidation of various difficulties experienced by practical men. These experiments are now in course of being carried out at Chiswick, and it is anticipated that the Fellows will find interest in observing their progress. They relate

to the effect of certain manures on different grasses or vegetables, under various conditions—the influence of the stock on the scion, and the nature and degree of this influence in different stocks—the effect of pruning upon the growth of forest trees—the influence of coloured glass upon flowers and plants grown under it—various points in hybridisation—the cause and cure of the black spot in Orchids, and a number of other matters of a similar nature.

5. The Council are now making arrangements by which reports of the experiments conducted at Chiswick, and of the transactions at the various Committees, can be obtained by the Fellows without the delay which the present form of the publications of the Society has hitherto necessitated.

6. The other well-established means for the advancement of horticulture continue their efficient working. The Fellows are familiar with the labours of the Fruit and Floral Committees. These, during the past year, have in no degree fallen short in importance and interest of those of previous years. For some details regarding their operations the Council refer to their Reports in the Appendix.

7. In addition to the twenty minor Shows on Tuesdays, five principal Shows have been held at Kensington during the past year; and the Council think that they can discern the beneficial influence of the Society's operations in the improvement of the cultivation of more than one class of plants. Those who remember (for example) the meagre response to the Society's first efforts to encourage the growth of Roses in pots in 1862, must have seen that great progress has been made in the treatment of that favourite flower; and the Council venture to think that this and some other improvements are mainly due to the well-directed encouragement given by the Society.

8. The experiment of a country Show, which had been tried with such good results the previous year at Bury St. Edmunds, was successfully repeated last year at Leicester. A beneficial impulse has been given by these Shows to horticulture in these districts, without risking or encroaching on the Society's means. Manchester has been selected for this year. Requests have been made from several other places that the Society will hold an exhibition in them, but at present the Council do not see their way to accede to these wishes, thinking it more prudent to hold one country Show only in the year, and that in connection with the Royal Agricultural Society. With regard to these country Shows, it is perhaps right to remind the Fellows that, in adopting them, the Council carefully guard against imperilling the means of the Society. In every case they make it a preliminary *sine qua non* that the locality which desires its presence shall protect the Society from the chance of loss, by providing a guarantee for such a sum as the Council think sufficient for the purpose. This has been done by the Manchester horticulturists, as at Bury St. Edmunds and Leicester, and in addition (as was also done at these places), special prizes to a considerable amount have been subscribed for by them.

9. The increasing frequency and amount of donations of special prizes by private individuals or associations in supplement of the prizes offered by the Society, is a feature in its progress which seems to call for particular notice and thanks. A list is appended of the donations of special prizes, since the opening of the Garden at South Kensington to the end of last year, and the Council are sure that the Fellows will see with pleasure that the exhibitors themselves are now contributing to the prizes offered for competition.

10. The Rhododendron Show of last year is deserving of record, not only from its extraordinary beauty and exuberance of bloom under the unusual heat of the season (although attended with the disadvantage of a curtailment of its duration from the same cause), but from the alteration and remodelling of the ground under the tent. The changes there appear to have been generally approved.

11. A subject having an important bearing on Horticulture—viz., the injury done by insects to vegetation, has been under the consideration of the Council, and they have taken some steps towards making a collection relating to it, for which it is scarcely necessary to say that their connection with so many horticulturists should give them unusual advantages. It would, probably, have been attempted before now but for the want of any fitting place in which to display the collection when made. The assistance of the authorities of the South Kensington Museum has relieved them from this difficulty. On communicating their wishes to them, that department met them half way, and undertook to house, display, and take care of, any collection that the Society might make. The Council would, therefore, beg such of the Fellows as have the power, to aid them in making this collection as complete as possible. Although apparently minute and trivial, it is in point of fact a subject of national importance. The labours of the State Entomologist at New York are reported in American documents to have saved the State thousands of dollars; and it is undoubted that here also much good may be done by encouraging similar observations and inquiries.

12. Another incidental matter which has been brought under the notice of the Council is, the adulteration of seeds. This, both to horticulturist and agriculturist, is a serious matter. They accordingly appointed a sub-committee of their number for the investigation of this subject, and it has devoted considerable time and attention to it. They have embodied the results of their inquiries in two Reports, which will be found in the Society's Journal. The Council believe that these inquiries have already been productive of good.

13. From previous reports the Fellows are aware that the shows have ceased to be a source of revenue, the expenditure on them consider-

ably exceeding the receipts. The Council have, however, refrained from diminishing the amount of prizes offered, from a desire not to lessen one of the favourite enjoyments of the Fellows; for although the Society still suffers from the effects of the commercial calamities of 1866, the Council regard this depression as temporary, the actual decrease in the number of Fellows being only eight.

14. The Royal Albert Hall of Arts and Sciences is rapidly advancing to completion. When finished, there will be a direct communication from the Gardens through the Conservatory to the Hall, affording to Fellows of the Society, who are also seat-holders, a quiet and private access to the attractions which will from time to time be offered in the new building.

15. The Council have learnt with satisfaction that Her Majesty's Commissioners for 1851 are now considering a plan, embracing the completion of the Gardens, for Annual International Exhibitions of objects of Industry and Fine Art, to be placed in the so-called east and west annexes.

REPORT TO THE COUNCIL FROM THE CHISWICK BOARD OF DIRECTORS.

1. The Directors report that—besides the work performed by the Fruit Committee at its ordinary meetings held at South Kensington—several experiments have been conducted at Chiswick under its immediate supervision. All the new Peas that were introduced last season were sown, and compared with the previously existing varieties; a collection of thirty sorts of Runner Beans was also sown and proved; and a test of the various kinds of Lettuce, as to their utility in standing the winter in the open air. Reports upon all of these subjects have been prepared.

2. Among Fruits, Figs and Strawberries have received special attention. The house which was transferred from South Kensington for the accommodation of the former, has proved in every way well adapted for the purpose, and has enabled the Committee to investigate the rich collection which the Society now possesses in a way for which there was no previous provision. Several new and valuable varieties of Figs have thus been ascertained, and are now in the course of distribution to the Fellows; and it may be gratifying to the Council to know that, by the assistance thus afforded, a great impulse has been given to Fig culture in this country, which is evidenced by the unusually numerous applications which have been made for cuttings.

3. An immense collection of Strawberries now exists in the Garden, and during the past season many new varieties have fruited, and have been compared with the others, their various qualities and merits ascertained, and a Report has been prepared.

Arrangements have this season been made for carrying out experiments on the influence of the stock on the scion, and *vice versa*, which it is hoped may lead to important results by the investigation of the affinities of vegetable tissues. These experiments will not be confined to the scions and stocks at present in ordinary use, but will embrace subjects the union of which with each other has never before been attempted.

4. The cultivation of Oranges has recently received some attention, and promises to become general in all gardens where glass houses exist. The success which has already attended those who have made the experiment of growing Oranges, not for ornament as formerly, but for the dessert, has been so great, that the Board of Directors would recommend to the Council to institute a system of Orange culture at Chiswick. There are at present no less than three houses devoted exclusively to stove plants, one of which might be spared for this purpose, and thereby enable the Society to exhibit to the Fellows, and horticulturists generally, the pleasure and profit to be derived from this hitherto-neglected branch of fruit culture.

5. The new Orchard House, to the erection of which the Council gave their sanction last year, is now completed, and will speedily be furnished with complete collections of Peaches, Nectarines, Apricots, and Cherries. These three kinds of fruits are what the Directors have thought proper to select for the first investigation; and for this end, as complete collections as possible of these have been obtained. Mr. Rivers, of Sawbridgeworth, has offered a large number of his fruiting Peaches and Nectarines, most of which are newly-raised seedlings of his own, on terms so liberal as to amount almost to a gift. The Rev. W. Kingsley, of South Kilvington, has most liberally presented a large collection of carefully hybridised seedlings of Peaches and Nectarines, which have not yet fruited, but from which there is every reason to expect varieties of great excellence, when the care and judgment with which the hybridisation was conducted is considered. Mr. Pearson, of Chilwell, near Nottingham, has also intimated his intention to send some of the handsome orchard-house trees for which his establishment is noted.

6. From the Pomological Department the distributions have been very numerous, 1700 packets of fruit-tree cuttings, of Apples, Pears, Vines, Figs, &c., and 75,000 packets of vegetable seeds, having been distributed among the Fellows in the past season.

7. The Directors are making the most earnest exertions in carrying out the recommendations of the Scientific Committee, on the result of which they hope to be able to report another season.

8. The usual attention has been given to the supply of plants both for out-door and in-door decoration at South Kensington; to the distribution amongst the Fellows of plants, seeds, and cuttings; and to the growth, for the use of the Floral Committee, of plants and seeds for trial.

9. The number of flowering and other plants which have thus been supplied during the past year to the Garden at South Kensington amounts to 53,000. In addition to these, there has also been reared at Chiswick a fine stock of stove and greenhouse foliage and flowering plants, which prove exceedingly useful both for the purpose of conservatory decoration and for supplementing the display at the Tuesday and other meetings, when required.

10. The distribution of plants, seeds, &c., which have been made to Fellows, and to Societies in union, absorb a considerable proportion of the grant for Chiswick. In the present instance 5572 plants, which have been allotted by ballot, have been sent out during the season, in addition to 1000 packets of cuttings and 75,000 packets of flower seeds.

11. The trial plants have consisted mainly of Pelargoniums, Fuchsias, and Petunias, with some annuals. Of these the collections which have been subjected to pot culture were very successfully tested, taking the extraordinary character of the past summer into account. The hot, dry weather, however, on the other hand, was very unfavourable to the much larger out-door stock, notwithstanding which, in this department, some very satisfactory results have been obtained, a separate Report of which has been prepared.

12. In carrying on the trials of new varieties of popular flowers, the collections of which, grown for contrast, continue to prove of much interest and value to persons residing in distant parts of the country, and who have but few opportunities of seeing the novelties annually produced, the Directors hope to receive, as hitherto, the hearty support of the raisers and distributors of novel varieties. They would take this occasion to point out how desirable it is that well-established plants should be furnished early in the season, so that the experiments may not fail, as they too often do, from the weakly condition of the materials with which the Garden Superintendent is supplied.

13. Last year occasion was taken to ask the assistance of Fellows residing in the country in making up a collection of the most interesting, but greatly neglected, class of hardy herbaceous plants. Contributions were, in consequence, received from W. W. Saunders, Esq., Messrs. Backhouse & Son, Mr. W. Masters, Mr. Ware, The Royal Gardens, Kew, and from some other sources, so that a collection of upwards of 400 species and varieties has been made. Fewer of the old-fashioned ornamental species, which it was thought might still exist in gardens in remote parts of the country, have been received than was expected; but the Directors are not without hope that more of these may yet be obtained. Among other specialities, a complete collection of Lilliums has been projected, and the Directors are glad to be able to report that 102 kinds, including species and varieties, have already been secured. Any further contributions to either of the foregoing collections would be gladly received.

14. Under the head of improvements, the Directors have to report the erection of a new spacious propagating pit, and the alteration and more convenient arrangement of some of the other structures used for stove plants. Besides these, the old curvilinear iron stove has been rendered very much more useful for cultural purposes, by having a glass division fixed in the centre.

15. Very satisfactory progress has been made in the raising of new plants by cross-breeding. The Directors, last year, had to report that some Golden Caladiums had been obtained, the first that were known to exist. These have proved to be very ornamental plants for spring and autumn growth, and will probably be distributed in the ensuing season. The Coluses mentioned last year have also occupied a prominent position, and it is a source of satisfaction to add that a set of Golden Coluses, much more beautiful than the first series, has since been obtained. Other hybrid acquisitions of the year are a new spotted Dieffenbachia (a hybrid between *D. picta* and *D. Weirii*), a very fine Golden Fuchsia, and several choice variegated Zonal and gold and bronze Zonal Pelargoniums.

STATEMENT OF ACCOUNTS from 1st January to 31st December, 1868.

RECEIPTS.		£	s.	d.	£	s.	d.
To Life Compositions	64	10	0				
„ Admission Fees	252	0	0				
„ Annual Subscriptions	7,113	12	4				
„ Garden Produce and Charges	993	3	5				
„ Daily Admissions and Promenades ..	405	6	9				
„ Rent of Space in Arcades	236	12	0				
„ Exhibitions and Fêtes	1,250	5	0				
„ Exhibition at Leicester	1,763	1	3				
„ Advertisements in Journal	50	15	0				
„ Special Prizes	75	12	6				
„ Miscellaneous	47	19	2				
„ Chiswick Miscellaneous	37	14	0				
„ Water	53	0	0				
Balance					12,843	2	5
Assets, 1867	£300	0	0				
Ditto paid off, 1868	105	0	0				
					2195	0	0
Subscriptions unpaid, 1868 ..	£1,000	0	0				
Valued at	500	0	0				
					2500	0	0
+Garden Produce, due but unpaid					£250	0	0
					14,025	8	3

EXPENDITURE.

	£	s.	d.	£	s.	d.
By Balance from 1867				378	0	11
By Chiswick Garden Expenses—viz.:—						
Rent, Rates, and Taxes	341	11	4			
Labour	1,619	9	8			
Implements, Manure, Coke, &c.	214	15	6			
Repairs	73	15	2			
Trees, Plants, and Shrubs	9	8	9			
Miscellaneous	35	0	10			
				2,294	1	3
By Expenses of Management—viz.:—						
Salaries	437	18	4			
Printing, Almanacs, and Stationery ..	4	17	9			
Journal	61	13	1			
Fruit and Floral Committee	44	4	4			
Foreign Importations	23	11	6			
Examination of Gardeners	23	5	0			
Postages	63	0	0			
Distribution of Seeds, Plants, and Cuttings	80	3	4			
Reading-Room	23	6	7			
Gas	82	4	3			
Horticultural Directors	416	10	0			
Wages	242	13	0			
Collection of Insects noxious to Vegetable						
Life	15	0	0			
Miscellaneous	65	11	10			
				1,582	1	0
By Expenses of Exhibitions—viz.:—						
Advertising and Posting	82	8	0			
Prizes and Medals	966	1	6			
Banquets	438	12	0			
Police	18	15	8			
Labour, Judges' Fees, Luncheon, and						
Sundries	274	0	6			
				1,779	17	8
Expenses of Permanent Exhibition				51	10	4
By Expenses of Leicester Exhibition:—						
General Expenses, Advertising, &c.	181	15	8			
Labour, Judges' Fees, Luncheons, Tents,						
&c.	550	12	10			
Bands	138	10	0			
Prizes	677	17	0			
Half-Profits to Guarantors	105	12	19			
				1,657	8	4
By Kensington Garden Expenses—viz.:—						
Labour	895	11	2			
Rent, Rates, and Insurance	923	5	4			
Engineer	15	5	8			
Repairs	423	8	5			
Water	20	8	6			
Implements, Manure, Coals, and Coke ..	73	5	0			
Gravel						
Trees, Plants, Seeds, &c.	53	18	2			
Superintendent's Salary	200	0	0			
Miscellaneous	54	19	4			
				2,660	1	7
Conversations				147	18	10
By Special Prizes				75	12	6
By Interest on Debentures				1,935	7	11
By Liabilities of 1867 paid off				330	10	5
By Liabilities on Current Account				1,166	7	10
H. M. Commissioners for Exhibition of 1851				0	11	8
				£14,025	8	3

30th January, 1869

Audited and found correct,

JAS. NICHOLSON,
R. HOBSON,
J. GIBSON, } Auditors.

POMOLOGICAL GLEANINGS.

THE CHERRY PLUM.—We observed in full blossom on February 4th, in the Royal Horticultural Gardens, Chiswick, a large tree, about 20 feet high, of this pretty and interesting little Plum literally a sheet of white. What a charming contrast it makes with all other deciduous trees, which are as yet scarcely on the move. A prettier object for the decoration of lawns and shrubberies for early spring can scarcely be desired than this early-flowering Plum. The blossoms of our fruit trees are at all times objects of beauty, but when produced thus early, and so far in advance of all others, they are extremely pleasing. It is to be regretted, however, for the sake of the pretty fruit, that the tree should flower so early, as there is but little hope of the fruit escaping injury during the long spring which is yet before them. Owing to this cause the fruit is but rarely seen. This season the tree is in flower earlier than usual.

TONGUEING THE MANETTI STOCK.

I HAVE for several years adopted the plan recommended by Mr. Curtis, of tongueing the Manetti Rose at the time of planting, and can confirm his statement. Such Roses not only emit roots, but if taken up after the second summer, will give plenty of strong "stuck" to furnish plants on own roots.

I have some hundreds by this method, and only this week took up a fine plant of Mrs. Rivers, which gave me three such own-root plants, and still left me a good—MANETTI.

WINTERING PELARGONIUMS.

MR. LUCKHURST has in some measure misinterpreted my remarks. No doubt, as I think I said in my last, a Pelargonium is about the easiest plant of any to winter, and the most accommodating; but my object in advocating a warmer and a more generous treatment than the plants usually obtain is to insure their being in bloom, or well-set with bloom, when they are finally bedded-out. The plan which Mr. Luckhurst recommends of planting-out in beds with 9-inch boards at the sides, and covered at nights with thatched hurdles, may do very well in Kent, but in Yorkshire the hurdles would have too often to be on the whole day through, and the plants grown in the dark; moreover, when the plants are lifted at bedding time, all the roots are broken, although undoubtedly it is a much better plan than keeping them in cutting pans; but at the best it is again but a makeshift.

If Mr. Luckhurst had as many requests as I have for cuttings of Pelargoniums, especially the newer varieties, he would find that taking cuttings in August would very materially interfere with the beauty of a flower garden. If one merely bedded and propagated the older varieties there would be less difficulty in the way of early propagation.

Those who have orchard houses and vineries at rest can, no doubt, manage very well to winter Pelargoniums without extra plant houses, but what I do find fault with gardeners for is, that having cool vineries and orchard houses, they still prefer to winter Pelargoniums in damp and cold pits; and only lately a friend, who, from his own experience, is equally with myself an advocate for keeping Pelargoniums growing during the winter, told me in a letter, that because he had fires in his plant house during the damp weather in November and December, some neighbouring gardeners said he would make his Pelargoniums too tender to live through the winter.

Mr. Luckhurst's plan with silver sand is, no doubt, a good one. Another very good plan not generally known is to put some lumps of quicklime in pots or pans about the frames, and remove them when it is slacked, which it will be by absorbing the moisture from the air.—C. P. PEACH.

GESNERA (NÆGELIA) EXONIENSIS.

This is truly a gem. It is not often we see such beautiful foliage and flowers combined. It is one of the finest plants I know of for table decoration, as the rich, dark, velvety hue of the leaves, and the bright colour of the flowers, contrast admirably with a white tablecloth; under the chandelier as it stands amongst the glittering silver and glass, it is, indeed, perfection. For the decoration of the conservatory or stove it is also most valuable.

I have a specimen about 2 feet through, with upwards of a dozen spikes of magnificent flowers. It is as fresh and beautiful now, in February, as it was at Christmas. The flowers are of an intense orange scarlet, with a yellow throat. The leaf is of a very dark velvety texture, studded all over with minute red hairs, almost like plush.

I remember some years ago when I first saw *Gesnera Suttoni* how much I admired it. This year I have had several other varieties growing side by side; they have done flowering for some time, but *G. exoniensis* is as fresh as ever.

When I received my plant several of the leaves were somewhat damaged with the journey. I took three of these off, and cut the stalk of the leaf about half an inch from the base. I next took three small pans and half filled them with crocks, on these put about 2 inches of peat, and filled up with silver sand. I then placed the leaves on the sand and pegged them down. From these I have now more than a dozen nice young plants, and by next winter they will be strongly established. I mention this merely to show how easily it can be increased.

I am growing mine in our stove, side by side with *Dalechampia Rozeiana rosea*, in full bloom; and hanging over it, on one of the supports of the stove, is *Thunbergia Harrisii*, producing masses of bloom, its lovely blue flowers contrasting most pleasingly.—F. P. L.

I know of no plant its equal for winter dinner-table decoration, and it has also the great merit of standing the dry

heat of the drawing-room. One always hails a really new and good addition to our gardens, but a winter-flowering plant to me always has a double claim.—J. RUST, *Bridge Castle*.

BIRMINGHAM POTATO SHOW.

THE Council of the Birmingham Cattle and Poultry Show have at all times manifested a desire to adopt as perfect a system of classification as possible in their prize lists; and a further and useful step in this direction was taken last year, when separate classes were for the first time opened for named varieties of Potatoes. The question as to the best plan of exhibiting Potatoes has undergone considerable discussion in some of our horticultural journals without producing any general agreement; but a course has been adopted at Birmingham which will hereafter, we feel satisfied, be almost universally followed. It had become evident that the simple old divisions of "Round" and "Kidney" sorts were most unsatisfactory, as must, indeed, be every attempt to classify Potatoes under particular forms; while, with the number of well-known varieties in cultivation, the advantages of classification by name are obvious.

The entries numbered sixty-six, of which sixty-three were sent; and, bearing in mind the drought of the past summer and autumn, the collection was an exceedingly good one; and a few remarks on the different varieties for which prizes were offered, now that the planting season is approaching, may be useful to some of our readers.

There were eleven classes for named Potatoes as follows:—Ashleaf Kidney, Rivers's Royal Ashleaf Kidney, Gloucestershire Kidney, Daintree's First Early, King of Potatoes, Wheelers' Milky White, Flukes, Dalmahoy, Red Regent, Paterson's Victoria, Skerry Blue, and an extra class for any other named varieties. Of course, in preparing a list of this kind there will always be some difference of opinion as to the sorts which should be selected; but the Birmingham list, we think, included the best kinds in cultivation at the present time, and most of which have been extensively grown for many years.

The first, the Early Ashleaf, is not now so often seen as it was ten or fifteen years ago; but it is most desirable that its cultivation should be kept up, as there is nothing superior, if equal, to it in quality, when well grown. There could be no hesitation about Rivers's Royal Ashleaf, which is a favourite in nearly all parts of the country. It is a great cropper, and succeeds well on all descriptions of soil. The same may be said of the Gloucestershire Kidney, which was, we believe, sent out sixteen or eighteen years ago, and the demand for which is increasing every year. This Potato does well on strong soil, which is not the case with all our early varieties. Daintree's First Early is a round Potato, something like the old Fox's Seedling, but larger. It is a good cropper, the tubers very regular in size, of excellent quality, and very useful to follow the kidneys. We have frequently advised cottagers to grow this Potato for use before the later kinds are in a fit state for cooking. The King of Potatoes has been very extensively and successfully grown, but it has not been coming so true as we should like to see it during the last few years; and we object to sorts which produce rounds and kidneys from the same root. When first sent out the produce was very regular, and, with some care in the choice of seed, it may again become so.

The next on the list is Wheelers' Milky White, first introduced by Messrs. Wheeler & Son, of Gloucester, three or four years ago, and the most valuable addition which has been made to our second earlies. The Milky White is of the finest possible quality, really milky white in appearance, crops well on light or on strong soils, and remains in perfection up to Christmas, or even later if carefully stored. Of the Fluke we need say but little, as it is so well known and appreciated. We may, however, mention that the true Fluke is not a large Potato, but very uniform in size. There were two or three lots of the Queen of Flukes sent to Bingley Hall, which were not passed over by the judges, as the prizes were offered in general terms; but another year it may be fairly required that none but the original Fluke shall be admitted to the class.

The Dalmahoy is not so well known in England as it deserves to be. It was raised at Dalmahoy, in Scotland, about, we believe, twelve years ago, and has, we understand, to a considerable extent displaced the White Regent, on which it is a great improvement, in that part of the kingdom. The Dalmahoy is a late white round Potato, the skin being rather tough, of excellent quality, and a large cropper, the tubers being uniform in size. The Dalmahoy is more vigorous in growth than the White Regent, and has been found to be productive in districts where the latter has proved a comparative failure. We believe that a large portion of the Potatoes now sent from Scotland to the London and other markets under the name of Regents are in reality Dalmahoys. The Red Regents in many cases proved a sad failure in the past year, and particularly in this neighbourhood; so much so, indeed, that we do not expect to see them extensively grown again for some time to come, especially as there are many other late varieties of much greater value. This Potato is also losing its original fine form. We have seen, at the Sparkenhoe Club and other shows, specimens as round as a cricket ball.

As Milky White for a second early, so Paterson's Victoria for a late crop is one of the most admirable additions to our Potatoes. It was sent out a few years ago by Messrs. Paterson, of Dundee, Mr. Paterson, sen., as many of our readers are aware, having given much atten-

tion to the cultivation of Potatoes for many years. The Victoria is an abundant cropper, of the very highest quality, and keeps well until the new supply comes round. It should be grown in every garden where there is room for late Potatoes; while it is just the sort which was wanted for field cultivation, where most inferior varieties have been too long tolerated, as those who dwell or dine in towns well know. In fact, the Victoria is already finding its way into general cultivation in our southern counties, and will be most extensively planted in other parts of the country during the present season.

The last named on the list is the Skerry Blue, not a handsome, but a very useful sort, and particularly for growing on a large scale. It keeps well, boils white, and has been frequently reported upon as resisting the disease better than any other Potato. There are some other valuable varieties in cultivation besides those we have enumerated, some of them of long standing, amongst which we may mention Myatt's Ashleaf Kidney and Wellington, which is useful as a second early.

The Miscellaneous Class at the late Show for other named sorts was an interesting collection, twenty-three lots being entered. The Judges had two first and two second prizes at their disposal in this division. One of the first prizes went to Messrs. Sutton & Sons' Berkshire Hero, a kidney Potato which will, we have no doubt, become a general favourite. It appears to be of vigorous habit, (for we have not grown it, being, like many others, too late in applying for seed last year); its quality and productiveness are highly spoken of; and the two samples sent were remarkably true to the engraving in Suttons' "Amateur's Guide." The other first prize was given for a round white seedling, shown by Mr. J. K. Fowler, of the Prebendal Farms, Aylesbury, about which we should be glad to have further information. We should judge it to be a second early, of good quality, while in appearance it is all that could be desired. One of the second prizes went to Mr. George Dunkley, Kingsthorpe, Northampton, for Johnson's Seedling Kidney, which was also very promising. The other second prize was given to a lot named "Shackel's Conqueror," very good, but improperly named; they were like the Wellington, but rounder in shape than we ever saw any specimens of that sort.

The question—Can we have Potatoes in fine condition all the year round? has often been asked, and, we think, it may be answered in the affirmative if proper care is used in the selection of varieties and in cultivation. To ensure this result some one or more of the kidney Potatoes we have named should be chosen for the first crop; and we have always thought that more kidneys might be grown with advantage than is generally the case, such as Rivers's and Gloucestershire, which are large croppers, and keep well for some considerable time. We say nothing about which sorts are the earliest, as the race for very early Potatoes is simply a race for an indigestion; most of the earliest are much more wholesome and much better in quality if gathered when perfectly ripe and kept for a couple of months before cooking. Daintree's First Early would follow the kidneys; and, as we have said, in the Milky White we have all that could be desired for a second crop. With regard to late Potatoes, there is now no difficulty whatever in making a satisfactory selection, Paterson's Victoria, Dalmahoy, the Fluke, Skerry Blue, and some of the other blue varieties, affording ample means of doing so. The Victoria and the Fluke are, perhaps, the most reliable, the latter, if of a good strain, improving in condition the longer it is kept.—(*Midland Counties Herald*.)

SELECT KITCHEN GARDEN SEEDS.

In naming what I consider the best varieties of kitchen garden seeds, I am guided solely by my own experience, and I have endeavoured to enumerate as few sorts as possible; but though I would gladly have named but one variety of each description of vegetable, I find it better to grow two or even more of some, as, from the difference in the seasons, there is a great difference in the produce. In some seasons an old variety never known to fail will be surpassed by one, the produce of which is not always good. I grow two or more varieties which I have proved, and if in one I have less than the standard of excellence, it is generally found in the other; but in the following list I have not named any but those which are good. Those marked * I consider the best, and to be relied on; those marked + are best suited for small gardens.

PEAS.—*First Early.*—*Dickson's First and Best and Ringleader (Sutton's), for the first crop, being the earliest of all. Daniel O'Rourke (Sangster's No. 1) and *Essex Rival are very good for sowing at the same time, and, coming in a few days after the two first-named, make a good succession. +Tom Thumb, the best very dwarf early Pea for small gardens and forcing.

Early or Second Crops.—These succeed the first-early Peas, and should be sown at the same time as the last sowing of such. +Advancer (wrinkled Marrow), +Little Gem (wrinkled Marrow), +Bishop's New Long-podded, *Prizetaker, *Champion of England (wrinkled Marrow, also good for third crops), and Early Favonite.

Main and Late Crops.—*Hairs' Dwarf Mammoth (Lord Raglan), +Yorkshire Hero, very like Veitch's Perfection, but dwarter; Veitch's Perfection, British Queen, and *No plus Ultra, the hardiest and perhaps the best Pea in cultivation.

To prevent an interval occurring between the second and main crops,

I usually sow, when the last of the second-early Peas are sown, a like quantity of Scimitar Improved and Victoria Marrow, the first of these being a fine cropper.

BROAD BEANS.—+Beck's Gem, *Early Long-pod for first and second sowing. If very early Beans are wanted, Early Mazagan. Mackie's Monarch and *Taylor's Improved Windsor for main crops; and *Royal Dwarf Cluster or Fan.

KIDNEY BEANS.—*Canterbury, Chinese or Robin's Egg for first sowing. *Cream-coloured, *Silver-coloured, or Dark Dun (best cropper), and Newington Wonder if a sort to be required for cooking with the pods whole. *Runners.*—Scarlet, the best and most prolific.

BEET.—Dwarf Purple-top (Cattell's), and *Pine Apple Short-top. Whyte's Black, if a sort be wanted for bulk, it being of good colour, but rather coarse.

BORECOLE.—Asparagus Kale, *Cottagers' Kale (very hardy), and *Dwarf Curled. Melville's Treble-curled Variegated Garnishing.

BRUSSELS SPROUTS.—*Strynger's and Roseberry.

BROCCOLI.—*Walcheren, best for summer and autumn. Grange's Autumn White for succeeding Cauliflower. *Snow's Winter White and Osborn's New Winter White for December, January, and February cutting. Pezance (Micheuson's), *Dilcock's Bride, and *Frogmore Protecting for February, March, and April cutting. Eclipse (Cattell's), *Elletson's Mammoth, and *Melville's White May for April and May. Snow's Nonpareil is, perhaps, the best late Broccoli, being very hardy.

CABBAGE.—*Cattell's Early Dwarf Barnes best for sowing for first crop, not running when sown by the middle of July. Enfield Market for second crop, and *Nonsuch (Dickson's) for summer; also Shilling's Queen and Largo York if summer Cabbages are required. +Atkins's Matchless and *Little Pixie, +Blood Red, and Mammoth Red, the last two for pickling.

SAVOY.—*Drumhead for autumn use; Dwarf Green Curled for winter, it being very hardy, and *Early Dwarf Uta, fine for early autumn use.

COUVE FRONCHÉE.—This excellent vegetable is but little grown. It forms an excellent substitute for Sea-kale, but requires to be sown in heat and brought forward.

CAULIFLOWER.—*Frogmore Forcing, Early London, best for August and first spring sowings; Asiatic and Stadholder for summer and autumn. The Walcheren Broccoli or Cauliflower is, perhaps, the hardiest for sowing to stand the winter, and is good for summer, but very liable to run to seed in dry, hot weather.

CARROT.—*Improved Altringham and *Long Red Surrey are the best for the general crop; Improved French Horn for early crops.

CARDUON.—Smooth Solid.

CELERY.—*Incomparable Dwarf White, the best late white. +Matchless Red (Williams's). *Manchester Champion Solid Red, a good late sort, keeping well up to April. *Champion White Solid, (Dickson's), early, and perhaps the best white for exhibition.

CRESS.—*Curled, best for general use.

CUCUMBER.—*Telegraph, perhaps the best Cucumber in cultivation; Lord Kenyon's Favourite, good either for summer or winter; and *Newton Hero, Beeston's Prolific, and Dale's Conqueror are also good. Bedfordshire Ridge, Long Prickly, best for Gherkins.

CUCURBIT.—Improved Large, for blanching and use as Endive for salads.

ENDIVE.—Batavian, best for first crops, but liable to rot. *Small Green Curled, the best curled early. Large Green Curled, the best for winter on account of its not being liable to rot like many of the others.

LEEK.—Large Masselburgh and *Henry's Ayton Castle Giant.

LETTUCE.—*Bath (Brown) Cos, best for spring use, being very hardy. Ivory's Nonsuch, *Paris White, and Wheeler's Imperial for winter or summer use. Drumhead, *Neapolitan, and *Tom Thumb. Hardy Green for winter. The last four are Cabbage varieties.

TOMATO.—Powell's Early and Orangefield Dwarf Prolific.

MUSTARD.—White.

MELON.—*Beechwood and Conqueror of Europe, both green-fleshed. *Malvern Hall and Wills's Oulton Park Hybrid, both scarlet-fleshed.

ONION.—*White Spanish or Portugal, Reading White, best whites. Brown Spanish or Portugal, *James's Keeping, and Deptford, *Blood Red and Strasburg. The last are the longest keepers, but strong-flavoured; *Tripoli Italian for autumn sowing, and the Nocera for pickling.

PARSLEY.—Myatt's Garnishing.

PARSNIP.—*Hollow-crowned.

RADISH.—*Early Scarlet Short-top, best for general crop. French Breakfast and *Wood's Frame for frame culture. *Red and *White Turnip for summer and autumn. Black Spanish, best for autumn sowings.

SPINACH.—*Round, best for summer; *Prickly for winter. The New Zealand Spinach is good, not being liable to suffer from drought, but it requires to be sown in heat and transplanted.

TURNIP.—*Melbourne Early White and Snowball, both white, for early use; *Monsetail, Orange Jelly, good yellow; Chirk Castle Black Stone, *Altringham Yellow, and *White Stone for late sowings.

VEGETABLE MARROW.—*Custard and *Long White.

I have omitted all the perennials, as Sea-kale, &c., and some annuals that are not generally cultivated, but I give them below.

CORN SALAD.—Italian seed is best.

CHERVIL.—Curled-leaved Parsnip for autumn sowing. The leaves are used for garnishing, and the roots for cooking like Parsnips.

CAPSICUM.—Small Red and Yellow Chilies; Long Red and Yellow Capsicum.

EGG-PLANT.—White, Black, Purple, Scarlet, and Spotted.

GODROS.—Large Orange and Mammoth, both very large.

ICE-PLANT.—(*Mesembryanthemum crystallinum*), for garnishing.

KOHL RAB.—I never could see the value of this, but the White Transparent and Purple Transparent are best for table.

CURLED MALLOW.—Fine for garnishing, and an excellent substitute for Vitis leaves.

ORACH.—New Giant (Lee's) and Yellow, good substitute for Spinach, and by some preferred to it.

RAMPION.—The leaves are sometimes used as salad, occasionally boiled as Spinach, but it is chiefly grown for its roots, which are used like Radishes.

RAPHANUS CAUDATUS.—Edible-podded Radish—requires to be sown in heat.

HERBS.—Sweet Basil, Borage, Sweet Marjoram, Summer Savory, and Tobacco for fumigation.

—G. ABBEY.

PROPAGATING AND WINTERING VERBENAS.

It may be interesting to some of your readers to know our method of propagating and keeping through the winter these very useful bedding plants, in place of the old-fashioned way of keeping in a store-pau a hundred or so, which by the spring are decrepit and generally covered with mildew.

About the middle of July we have boxes 1 foot in depth, fill them three-parts full of light soil; then, covering the surface with silver sand, we put in the cuttings, choosing only clean healthy wood. We cover the tops of the boxes with glass, damp the cuttings slightly over as they require it, place them under a north wall, and when rooted pot the plants off, three in a 6-inch pot, in some rich loam mixed with a little manure and a sprinkling of bone dust.

When rooted we give the plants as much air as possible, and keep them through the winter near the glass in a cool house or pit, with a temperature of 40°. Under this treatment we have abundance of good healthy cuttings in the spring.—E. WILSON, *Propagator, Chatsworth.*

CAMELLIAS OUT OF DOORS.

NOTICING in your report of the proceedings of the Royal Horticultural Society on the 19th of January some remarks on the Camellia, it struck me that it would be interesting to your readers to know that Camellias are cultivated here in large numbers, and produce better blooms in the open air than under glass. At Mainland, the seat of M. Gibout, Esq., Camellias may be seen 12 or 14 feet high and quite as much through, literally covered with thousands of flowers and buds in all stages of development. *Alba plena*, *Imbricata rubra*, *Mathotiana rubra* and *alba*, *Saccoci vera*, *Donkelsarii*, *Jenny Lind*, *Landrethi*, *Reine des Fleurs*, *Marie Morren*, *Caryophylloides*, *Henri Favre*, *Lady Hume's Blush*, &c., are all first-rate varieties, and are cultivated in the island in the open air.

Nothing can surpass, not to say equal, the appearance of M. Gibout's grounds in winter and early in spring. Whilst most gardens are devoid of flowers, his Camellias are gorgeous masses of bloom varying from the purest white to the deepest crimson. Why the Camellia is not more generally cultivated as an ornamental shrub in the south of England, is to me a mystery. All that is done here to insure success is to plant in peat or leaf mould, with the addition of well-rotted cow dung, about two barrowful to each plant; and in four or five years the plants are capable of producing six or seven dozen blooms. Irrespective of their flowers, the plants are most ornamental from the deep lustrous green of their foliage and the symmetrical outline they generally assume, if not choked up by other shrubs. I notice they grow more luxuriantly if shaded by lofty trees; in fact, I have about a dozen plants under a north wall which never see the sun, and which are pictures of health and luxuriance; though only three years planted and only five from the graft, they are literally covered with buds. One plant of *Landrethi* and one of *Saccoci vera* have each upwards of a hundred buds, which will not open in this situation till March. These plants have never been protected from frost, and have received no other attention than an occasional watering in long-continued drought.

I have been led to write these few remarks from reading that Dr. Lindley settled that the Camellia was hardy, but would not flower unless it received heat. Now, I would like to know

where mine under a north wall receive their heat from, for I have not had a false flower on them, though a large proportion of the blooms is annually spoiled by rain or frost. Should a list of the varieties grown here in the open air be deemed instructive, I shall gladly furnish you with one, but I think all are equally hardy.—*Turf Bank, Jersey.*

STOPPING VINES.

IN establishing a house of Vines, 6-foot fruiting canes planted, and cut down to 4 feet, at 4 feet apart, would you grow the terminal buds (the rods) to their intended extent in one season (the coming one), or stop at—say 6 feet of new growth, thus obtaining 6 feet of wood to ripen and fruit next season, and grow the terminal buds (rods) again another 6 feet and stop, ripen again, &c., in the following season, and so on, until the extent of rods were completed? My object in 6-foot-growth stoppings is to concentrate the yearly vigour of the Vines in the rods, and obtain good stems and bottom buds, and to expend the surplus sap in a bunch of fruit on each 4-foot Vine this year, and from two to four bunches on each 10-foot Vine next year, and so on progressively as the rods extend 6 feet each season, are stopped, and ripen each yearly growth, until finally stopped at some 25 feet. All laterals I would stop at four leaves near the base up to 6 feet of rod, at three leaves for the next 6 feet, and two leaves afterwards, for spurs, at 9 inches to 1 foot asunder, and rub off all intermediate buds or lateral shoots. The object is pyramidal flat training, and bottom wood and buds, the rods being grown perpendicularly 6 feet up front glass before reaching the roof training point, and which 6 feet I propose to fruit as in hop poles or pot Vines.—READER.

[Your proposed plan of stopping the main stems of the Vines when they have made a 6 feet growth, and then allowing a fresh leader to go on, and stopping laterals, is excellent for concentrating strength nearer the base of the Vine, and is of importance in all cases where such matured strength is to be concentrated in reduced space; but it is of less importance in the case of young Vines, where plenty of room can be given to them, and the free growth of the leader does not prevent laterals coming from the nodes at which the lower buds are situated. The stopping makes the matter surer, and provided merely the terminal bud is nipped out, little check is given, and an impetus is afforded to the production of plenty of laterals on the lower part of the stem.]

RABBITS GNAWING TREES.

I SEE many of your readers have been troubled with rabbits barking their trees, and, I am sorry to say, I have suffered from the same cause. Various measures have been recommended to remedy the evil, some of them both troublesome and expensive. The plan I have adopted is simple and effectual, and consists in painting the stems within their reach with Stockholm tar. Those treated thus last winter have never been touched since.—J. R. J.

VEITCH'S IMPROVED EARLY ASHLEAF KIDNEY POTATO.

As this is the season for selecting seed Potatoes, I should like to make a few remarks respecting this very good and early variety.

In the first place, I started a few in the Cucumber house, and afterwards planted them on February 10th in pits with bottom heat, and I dug up the first dish of tubers on March 20th, they being very good, though produced in so short a time. On April 14th I planted in the open ground, they were soon up and earthed, and I dug the crop up on July 8th; the tubers were thoroughly ripe, large, and had a beautiful clear skin. I sent a sample to the Editors for inspection, and their remarks may be seen in the Journal of July 16th, page 48.

Thinking I could obtain a second crop, I again planted on July 10th, after scorching the seed Potatoes in the sun for the two days. They were some time coming up, owing to the dryness of the weather, so I gave the rows a little water. The Potatoes came up, were earthed up, and grew until October 18th, when the sharp frost put an end to their growth. I dug up the crop on October 20th, and the tubers were a very fair sample of middle size, but of course not ripe. I also sent a sample of these to the Editors, whose remarks may be seen

in the Journal for October 29th, page 324, where, by mistake, they are referred to under the name of the Walnut-leaved Kidney, but they were the second crop of Veitch's Improved Early Ashleaf planted on July 10th. They were grown in a light sandy loam on a subsoil of gravel. The first crop was all that could be desired for a gentleman's table.

Next to the variety just named, I like Myatt's Improved Prolific Ashleaf, which is a good cropper, a good Potato for the table, and succeeds Veitch's well. Rivers's Royal Ashleaf Kidney is also a first-class Potato, very similar to Myatt's. It yields a good crop, boils floury, and is also second to Veitch's. I think if gardeners were to grow these three varieties they would have three of the best early Kidneys, and by growing Fluke Kidneys for a late crop they would then have four of the very best Kidney Potatoes that could be found in any seedman's catalogue.—J. R. P., *Tilburstow Lodge, Godstone.*

PLANTS IN FLOWER DURING JANUARY.

Jan. 5. <i>Arabis albidia</i>	Jan. 18. <i>Ilex aquifolium</i>
<i>Rhododendron dauricum</i>	Rose, old Monthly China
<i>Mathiola annua</i>	<i>Pulmonaria officinalis</i>
<i>Cepitula officinalis</i>	<i>Forsythia viridissima</i>
<i>Hepatica triloba</i> , varieties	<i>Daphne mezereum</i>
Male Pink	<i>laureola</i>
<i>Dianthus caryophyllus</i>	„ 21. <i>Viburnum tinus</i>
<i>Omphalodes verna</i>	<i>Andromeda polifolia</i>
<i>Gaulthieria nivalis</i>	<i>Chimonanthus fragrans</i>
<i>plicatus</i>	<i>Erica arborea</i>
<i>Helianthus foetidus</i>	<i>ranulosa</i>
<i>niger</i>	„ 28. <i>Hamamelis virginica</i>
„ 11. <i>Erantibus hyemalis</i>	<i>Hedera helix</i>
<i>Cheiranthus fruticulosus</i>	<i>Ros</i>
Rose, Crimson China	<i>Clex europæa</i>
<i>Veronica syriaca</i>	<i>Viburnum lucidum</i>
Primrose, double Lilac and	<i>Cerastium tomentosum</i>
Crimson	<i>Taxus baccata</i>
Polyanthus, various	<i>Gemma rivale</i>
<i>Erica carnea</i>	<i>Viola odorata</i>
<i>Phlox stolonifera</i>	<i>lutea</i>
<i>setacea</i>	<i>Doronicum caucasicum</i>

—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

NOTES FROM SOUTH AUSTRALIA.

(Concluded from page 83.)

NEXT morning we diverged to Donnelly's Creek, and spent two days examining the various reefs and alluvial diggings. The country was one mass of scrub and saplings, without any attractions except as to mining. We started for Mount Useful, but as rain came on we camped and waited a day, during which time we had to remain in the tent, and the great altitude we had attained made the nights very cold. About the middle of the second day it cleared up, and we again made a start. Still the same climbing through a very barren series of ranges, not a particle of soil, and the granite and sandstone standing up in huge blocks of many tons in weight, yet the scrub thick, and Stringy Bark and Box large; the country, too, was very difficult for travelling. Arrived at the foot of Mount Useful we stopped at a hut and examined the scenery. We could not resist the temptation of going to the top of the Mount, and after an hour's climbing we reached the summit. The first glance amply repaid us for the extra labour, for while we were down upon the track the surrounding scrub obscured the view except at intervals, but we were now far above everything, and could see in every direction as far as the eye could reach. Here, at an elevation of 3000 feet above the level of the sea, we sat and gazed upon the vast expanse of mountains and valleys, chain after chain stretching as far as the eye could follow them, and with various spurs running out. As we looked down upon them they had all the appearance of the sea in a storm; this was the more impressed upon us from the fact that north and south, as far as we could see in a westerly direction, the trees without a single exception were dead, standing whitened skeletons throughout the hills and valleys. The whitened trunks and heads of the trees were brought out boldly by the deep green foliage of the green underscrub saplings. I could obtain no satisfactory reply to my inquiries as to the cause of the universal death of the timber, the most probable being the great fire that passed through the country on what is termed Black Thursday, 1850. We noticed some excellent varieties of *Xeranthemum*, the largest we ever saw, and gathered their seeds, also those of a scarlet-leaved *Eurybia*, of which we had previously seen individual plants, but could not find any seed.

Having made our way down the Mount and come to the hut where we had left our provisions and awaga, we found two pigs had eaten and destroyed the whole of the former. Believing this had been connived at by the proprietors to compel us to purchase more, after a passage of words we travelled on determined not to capitulate to them, although compelled to beat a retreat. By hard walking we succeeded in reaching Blackwall, a place only in name bearing any resemblance to the Blackwall. Arriving at the commencement of a very steep descent just at dark, we determined to camp, and, making a good fire, went supperless to bed. Waking at daybreak, about 4 a.m., we went outside to see what sort of a country we were in: before us lay a basin of about two miles in diameter, with a beautiful river running along the bottom, and having the banks clothed with timber to the water. The opposite bank being level with us plainly indicated what we had to do before we could breakfast. Accordingly we packed up and started down the hill, six miles to the bottom; the feet placed sideways to prevent our going too fast, every step threatening to send us headlong down, and I believe once down a person could not stop but would roll to the bottom. This was Aberfeldie, and at the bottom, which we reached at 8 a.m., we found a store and—what a relief! a small garden with a few vegetables. Here we replenished our stock of provisions, breakfasted, and took a ramble down the creek, but were disappointed, all being barren rocks, with nothing but *Eucalyptus* scrub.

We now had the opposite bank, six miles, to go up; filling our hilleys with water we commenced the ascent, the sun striking powerfully, and the temperature being about 90°. We dragged on our weary journey, and after many a rest arrived about three in the afternoon at the summit quite anxious for dinner and a siesta. We put up the tent, had dinner, and tried to sleep, but the flies and mosquitoes—those enemies of all travellers in the bush—prevented it, and we smoked, but that did not drive them away; so we prepared for another start. The vegetation here consisted of one interminable scrub of *Acacia* and *Eucalyptuses*, with hungry, barren sandstone cropping up.

We travelled all day through apparently trackless ranges, making places named by travellers, Red Jacket, Blue Jacket, and Violet Town, arriving at the last-named on the second day after leaving Aberfeldie. Finding the range so steep, and being very much fatigued with our heavy awaga, we camped, and, after fixing the tent, rambled up and down the creek, but found nothing of consequence except a fine variety of *Panax* with very large foliage; of this we secured seeds, though scarcely ripe. We spent the afternoon in looking through the diggings and rambling about, and next morning resumed our journey. The scenery for fifty miles was much the same and limited to the immediate steep banks of the creeks, or the pathways of the dense scrub through which we passed, and this sameness continued until we reached Wood's Point, then famous from the immense quantity of gold being daily obtained.

We found this place full of bustle and excitement; hundreds of miners were daily pouring in from all quarters, the two or three rapidly-erected hotels were full day and night, and the place in continual uproar. The whole of the tents and houses were gathered in the creek or its immediate bank, as at Stringer's Creek, and great was the activity of all. Everything had likewise to be carried on the back—shingles for roofing, timber from the sawpits, all had to be carried at per hundred feet by men. We spent a week thoroughly investigating the various reefs and alluvial workings, and in rambling up and down the creek gathering seeds of the various species of *Pit-temporums* and shrubs in which it abounded. We saw beautiful patches of *Dianella longifolia* perfectly blue, with their bunches of bright blue berries; we gathered some of these, but as regards the major part of the shrubs we were too late for the flowering, and too early for ripe seed. After spending a fortnight here and examining the country in every direction for several miles we started for Melbourne, distant in a direct line about one hundred miles.

The return journey for the first thirty miles is a frightful part of the route—up steep rugged hills and down again. Mount Strickland, being all small granite boulders, was very bad for the feet; Vinegar Hill and Mount Arnold were very steep and long, though having the advantage of plenty of water at intervals of a few miles. At Mount Strickland was a most beautiful spring; the water icy cold, gushing out of the rock into a naturally-formed basin covered with Fern trees, and with overhanging *Sassafras* trees excluding the light. The great heat in these gullies, and the moisture dripping from the

trees owing to the condensed evaporation, together with the unearthly stillness which reigned, created a peculiar feeling. The trees in these creeks, from the heat and moisture, are covered for 30 feet in height with moss, and on placing the hand upon the stem it sinks in a foot to the tree, giving a cold, clammy, disagreeable sensation.

During this day's journey we crossed the Acheron and Watt's rivers, and a fine creek called Hungry Creek and Paradise Plains. We here passed through some magnificent timbered country; the trees all from 200 to 300 feet high without branches, and growing at such regular intervals that one was almost led to think they had been planted by the hand of man. For twenty miles the timber was all of the same appearance, none or very little undergrowth, and the trees all of about one age. We met several gangs of pack horses taking up stores. These came down the hills at a rapid pace, the leaders having a bell on, at the sound of which anything or person must immediately clear from the track if possible, as there is no turning in it. The way the horses are taught this fatiguing work is as follows:—The unbroken colts are driven into a yard and thrown, a pack-saddle is placed upon them and loaded, an experienced horse with a bell on is started in front, and away they tear as if mad, up hill and down hill, till from sheer exhaustion they drop into the easy and steady pace required. Sometimes in their madness they step out of the track in a steep place, roll down 300 or 400 feet, and are dashed to pieces.

At New Chum we arrived just in time to catch a coach for Melbourne, where we arrived about midnight, after having had six weeks of the most interesting travelling we had ever experienced.

I fear the subsequent notes on horticulture will not be very interesting to you, everything with us being so young, but we are laying the foundation of magnificence, for all our streets are being planted, some with *Pinus insignis*, some with *Eucalyptus globulus*, or the Blue Gum of Tasmania; and in places, according to the taste of the citizens when done by themselves, generally the *Wellingtonia*, *Deodar*, or *Arancaria imbricata* is employed. This part of the colony appears to be adapted to the trees mentioned, as they make a vigorous growth and are not affected by our frosts in winter.

We have every prospect of a good crop of all kinds of fruits this season; the Cherry, Pear, and Apple trees, now (October), in full blossom, are, to speak familiarly, a perfect sheet of bloom, and Gooseberries are as thick as they can hang. We are 'subject, however, to heavy hailstorms in November, and these may devastate whole orchards and gardens. Last year our Pears, although set well, especially two trees of Van Mons Léon Leclerc, and William's Bon Chrétien which should have had 4 bushels each, bore not one; we congratulated ourselves that we had escaped the storm, but as soon as the Pears begin to swell and attain weight they fell off, and on examination we found that the hailstones had struck the stalk and bruised it, and as the Pear increased in weight it broke the stalk off at the bruise.

Strawberries are very difficult to manage in this country, not seeming to set well. Several years ago I had a number of varieties from England, and but a single plant of the whole was alive on arrival; this was Trollope's Victoria, and we took every care of it, increasing it as much as possible, and it has proved to be the only certain setting Strawberry we have yet had. I have this season forwarded upwards of 30,000 plants to various persons in the trade, the produce of that single runner. The loss of the others was occasioned by packing the balls of other plants with them. I have invariably found my losses have been occasioned by balls of growing plants being packed with dormant plants or seeds, or even with the balls of dormant plants, as Vines, in which there is a large quantity of moisture. For instance: two mails ago I received from an English nurseryman a box of Conifer seeds with a dozen Pentstemons, and although packed in charcoal, the moisture from the earth of the Pentstemons had damped the whole and destroyed them.—JAMES DUNCAN, Victoria.

THE PORTABLE ORCHARD.

Such is the name given by my friend, Dr. Hogg, to my collection of fruit trees, grown in pots in the open air, and at his request I shall try and describe at length the method of cultivation I pursue; but as it has been entirely derived from following out my most valued and esteemed instructor's hints and directions, given both practically *vivâ voce*, and in his clear though concise books—"The Orchard House" and "The Mini-

ature Fruit Garden," Mr. Rivers must have all the credit of producing for me in the cold north fruit that equals that grown in more genial climates, and also of all that is original in my mode of culture. And as I have been often asked to describe the ways leading to the results seen here, and also as at times in *THE JOURNAL OF HORTICULTURE* there are notices of wants that could not exist were "portable orchards" common, I do not think I shall either be wasting time or be guilty of plagiarism in placing before the public a few articles upon the subject, always premising that the two books of Mr. Rivers are supposed to be in the hands of my readers.

The advantages of the treatment about to be described are twofold; first, in obtaining fruit of the highest quality without glass in exposed, or cold, or damp climates; and, secondly, in having the power of removing the trees at any time—a matter of no small importance to tenants at will, or for life, like myself and brother parsons. I may also add that the experiment has been tried here on a sufficiently large scale to enable me to speak of the results with reasonable confidence; no hasty inductions from small-scale experiments are of value in the eyes of either philosopher or practical gardener, and as I have hot walls, hot borders, and good heated and unheated houses, I can fairly judge of the results of growing trees in pots without any protection whatever; at the same time I should advise the use of cheap protectors when the orchard is a small one, but when the trees are reckoned by the thousand the use of protectors is out of the question for men of moderate means.

The general description of the system is very simple, as it consists of growing the trees in pots perforated all over to enable the roots to spread outside freely when the pots are plunged in the ground, and then in piling them like cannon balls from October to April, merely coping the pile with planks or sods to throw the wet off, for the great enemy to successful fruit growing in this country is cold with wet; well-ripened wood takes no harm from any amount of frost provided it be dry, and I believe nearly the same may be said of the roots. Another cause of the success of the method is the power of retarding the blossoming season; for the trees become so perfectly dormant from absence of water at the roots, that very little growth is visible till the pots are plunged, and watered if need be; but then the growth is rapid, and realises the description of Siberian springs. As in many other things, new ideas in gardening often occur to several minds much about the same time—and whether in such cases as this one person or another hits upon the notion first is of very little consequence—I had not heard of the plan of using perforated pots for plunging in the ground, and at first I used some Orchid pots, but I found my old friend, Mr. Rivers, had anticipated me, and was using them in large quantities, but only of small sizes, and was not prepared to find my trees so large, 10 feet high being no uncommon size here.

I trust before long to get the cottagers of our district to take up this method of cultivation, as a recreation that will at any rate repay the time and labour spent upon it, and I cannot but think that anything which brings pastor and flock into direct intercourse, without the official barrier to seeing what each really is, will prove of great service to both; such high cultivation requires the better-informed mind to direct, but the carrying out of details is simple, and within the power of any peasant. The man, of all others, of my acquaintance who was most respected by his flock, and who effected the greatest improvement amongst a wild set of mountaineers, was a most scientific farmer, and he carried on a set of agricultural experiments simply for the small farmers who formed the great bulk of his parishioners; but then he had a private fortune, and above all, thoroughly knew his subject, and was easily able to convince his agricultural neighbours that he was very much better informed than they were. Had he tried farming in the way that most parsons would have to begin, he would have been pretty sure to have gained their contempt; and so in all worldly pursuits, the parson must either at once pay little attention to them, or else take care to be so far ahead of the general public as to be of decided use to those around him. Now, fruit culture is just one of those things that an educated man can learn easily and well, and at a very trifling cost, either of time or money, and in country parishes it is sure to be a matter of interest, and I should be glad to see the clergy generally better informed regarding it. I can see many other classes to whom such knowledge would be a real benefit, and therefore I hope what I am about to write will not be worthless, though it is the teaching of an amateur, and I have in general a very poor opinion of all amateur work.

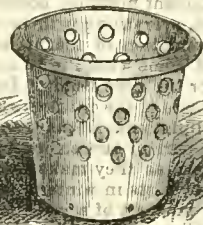
The first thing to be procured is the fruit tree, and the next the pot in which it is to be grown. When I first came here I

procured a few Pear trees from a nurseryman in a large business within a day's reach, because I knew that the trees from Mr. Rivers would take a long time on the road, and the weather was excessively cold. These trees are now large, capable of bearing large crops, and have been most carefully trained; and to give them the best chance of success, I did not allow them to bear a single fruit for five or six years after planting, and they became just the sort of trees one sees figured as specimens, but when the fruit was allowed to mature not one was the sort I had ordered, and most of them were quite worthless. Few things in a small way are more annoying than this, and had I not yearly planted large numbers from the Sawbridgeworth nurseries, I should now have been badly off indeed. When one is on the rapid downhill course, the loss of five to seven years in any one subject is serious, and keenly felt; so I say to all, Be sure to get your trees from a man who will be certain to send what you want, or tell you he has not the sorts ordered. Again, the early treatment of the trees is so important, that even if a higher price were charged for them it would be money well spent; but I do not find that the price is at all a measure of the quality of the "stuff" sent out by nurserymen, and there can be no doubt of the goodness of the rule, to go to the highest-class firms for all such purchases. The curious in fruit trees, like myself, will find in almost every extensive garden or country nursery many varieties new to him, and therefore desirable; but beyond the *sorts*, the *growth* of the young trees is most important. I am sorry to say nurserymen do not take as much pains as they ought with young trees, and early neglect makes it nearly impossible to get a well-formed mature tree. In the case of those who can afford to look forward for many years, "maiden trees"—i.e., those grafted in the preceding season, are the best, as then the whole training must be done after the purchase; but a couple of shillings makes a difference of as many years in the age of the tree, and when the tree has been properly brought up the extra price is well bestowed. Now, remember, it is not the size of the tree that is the proof of its good education, but the *form* and *condition* of its branches and roots, and I feel constantly a professional inclination to "improve upon" the bundles of fruit trees brought into the markets of country towns to suit the ignorance of worthy country folk—all rank growth and club roots. At present I must assume that those who are seeking for information on the subject in these pages do not know what a well-grown tree is, and so I can at the present stage say no more than, Trust a good man to furnish you with the tree you want. Before we have ended our discourse I hope my studious friends will know something about the reasons for asserting that one tree is properly trained and another not. As the trees for the portable orchard will eventually become much larger than potted orchard-house trees, those already established in pots are safe, but by no means the best, for the purpose.

It may be as well in this place to speak of the proper season for potting young trees; further on I shall have occasion to speak about the time for shifting from a smaller-sized pot to a larger. Where the trees are growing close at hand the potting should be done before the leaves have fallen and after they show signs of changing colour, and for some weeks after potting the pots should be plunged in the ground, or better still in a manure or bark heap, with a little heat in it: the trees will then make some fresh roots before the winter. Water should not be given for a week or ten days after potting, and not then unless the weather is very dry; sun and wind should be kept from them, and then the soil in the pots will be damp enough to preserve the requisite moisture for so short a time. The potting compost should be firm enough to retain the impression of the fingers when a lump of it is squeezed in the hand, and yet dry enough to crumble easily. When the soil is wet the trees do not seem to flag; but this fact is due to the wounded roots taking up the moisture, just like cut flowers in a glass of water, and no healing takes place. Stop, therefore, the exhaustion by shading from sun and wind, and do not saturate the soil with water. But when trees come from a distance, and to a cold climate, I am persuaded that it is better to allow the severity of the winter to be past before they are taken out of the ground. Last spring Mr. Rivers's remarks about the moving of Pear trees on the Quince were most strikingly exemplified here. Some trees from France came to me in the middle of April, having been out of the ground evidently some time, and several having their blossom buds opening; these trees actually set their fruit and brought it to maturity, though we had no rain for months, and it was impossible to do more than give them a watering about three times in the course of the season. All my experience tends the same way, and I believe late in February to be the best time for

potting, and in a severe season later still. If the trees look parched on arrival, dig a trench, lay them in it, and cover them all over with the soil for a few days, and they will look plump and fresh when taken out before the end of a week.

We may now consider the pots. I myself commonly use four sizes—9, 11, 13, and 16 inches wide, and the same in depth, inside measure; but excepting for experimental purposes, I should recommend only the two largest sizes. The pots are made different in form, accordingly as they are intended for plants to be shifted from or to remain in for the rest of their lives. It is easily seen that to shift a large plant from one pot to another, unless by breaking the pot, is not an easy matter; so to help this process the shifting pots are made with very sloping sides, the bottoms being little more than half the breadth of the tops, but those for permanent growth are nearly cylindrical. By letting the soil get tolerably dry, and then gently rolling the pot, the ball will be taken out without difficulty, using care to draw the pot off the roots, and not attempting to pull the tree out of the pot by dragging it by the neck. All these pots are made with tiers of holes all round them, but with only one at the bottom, though I always have three or four small ones run through the sides from the inside of the bottom to insure the free escape of water, the object being to prevent the roots going into the soil downwards, and to encourage the lateral spread of fibrous rootlets. The holes in the sides vary in those I have from $1\frac{1}{2}$ inch to 2 inches diameter, according to the size of the pot, and it is better to have them more numerous towards the top; but this is not of consequence provided there are plenty of them, and yet not so many as to endanger the safety of the pot.



The accompanying figure indicates what I mean. I found no difficulty in getting the pots made by the first manufacturer I applied to; but I think he is a very good workman, and quick in taking up an idea. His ware is first-rate, and if anyone within easy reach of Ripon desire to obtain them, he cannot do better than get them from Mr. Smith, of Littlethorpe, near that city.—W. KINGSLEY.

(To be continued.)

THE MEZEREON—A WINTER FLOWER BED.

WHAT a charming plant the Mezereon is in the dull dark months of January and February, and afterwards as the days advance, until we have the sunshine of spring. I have often wondered why this fine old plant has been so long in the shade; for, generally speaking, we have now to look for it in some spot, cared for by a father's darling, near a humble dwelling, where it well repays the tiny hands that have spared no pains to induce the old favourite Mezereon to display its beautiful blooms, to say nothing of exhaling its delicate perfume.

There are many kinds of Daphnes, but my present intention is to bring into more prominent notice what is called our native Mezereon, which is perfectly hardy and of easy culture. I am anxious to induce more of our craft to give plants of it a place in some shady nook or elsewhere, for they are not very particular as to soil or situation. They are very accommodating for culture either in pots or borders, and will well repay any care bestowed upon them by their cheerful colour at this season, whether in-doors or out.

We hear much about winter decoration and spring gardening, and it is right we should; but I hope we shall hear more about our much-neglected native from those who are so well able to give sound information on that subject. It deserves to be brought in for a share of the honour conferred upon other worthy occupants of the winter and spring garden.

I know that any one might make up a very beautiful bed for this season's decoration with what are termed "very common things."

A good-sized bed made up in the following manner is no

despicable object at this season—of course it will require some time to get the plants prepared.

For the centre of the bed plant a distinctly silver-edged Holly; plant round it *Rhododendron dauricum*, next it *Jasminum nudiflorum*, then *Rhododendron variegatum*, next the deepest-coloured *Mezereon*, then *Viburnum tinus*, next the lighter-coloured *Mezereon*, then *Arbutus unedo*, and then the white *Mezereon*, finishing with *Erica carnea*. If the plants are in pots they can be easily plunged, or, if grown otherwise, they can be removed to the reserve ground. The various-coloured *Mezereons* make a fine bed by themselves.

But to return to the *Mezereon*. It is not uncommon to see its lovely blooms peering through the pure white snow. When so seen it is a charming sight, compared by some to a nymph; hence the name *Daphne*, who in the midst of winter seeks admiration in her summer robes. Its flowers appear in January and February, and one of its chief recommendations is that they continue long in perfection. In all their various colours the flowers are very beautiful in the early spring, and so is the autumn-blooming variety. It is said by some the plants will attain the height of 5 or 6 feet, and may be frequently met with near Andover in Hampshire, and Laxfield in Suffolk, but I have not had the good fortune to see them in their native habitats.

The *Mezereons* are of easy culture, and may be increased by division, grafting, or seed. The seed at times will not vegetate until the second season, sometimes causing those not acquainted with this habit to think it is not going to make its appearance, and so it is destroyed; but patience is required. When the seedlings have remained a season in the seed bed they may be treated as the operator may think best for the purpose they are intended for. They are good subjects for pot culture for in-door decoration, where flowers are in great demand in winter.

Good loam with a little fibrous peat, a little leaf mould, and a sprinkling of charcoal and coarse sand, as well as good drainage, are essential to the successful pot culture of these plants. Plunged in a shady situation during summer, and attended to with water as they require, they will bear gentle forcing, and amply repay any care bestowed upon them.—M. H., *Acklam Hall, Middlesbrough-on-Tees*.

GARDENING IN THE WEST.—No. 6.

From what has been said of the severe atmospheric aridity which the gardener must frequently encounter in the "Land of the West," it is clear that many items of common practice here are quite impracticable there. I will refer to some of these cases.

In England it is common to see trees and plants exposed for sale in the markets with the roots quite bare, and often so continued night and day even in the winter months, and with apparently but little apprehension of their being injured. Even evergreens are sometimes exposed in this way. The digging-up of trees, packing, shipping, and planting go on through all the winter months with but little check. All this is very different in the States. There no roots of any kind can be safely trusted to the uncertainties of the weather and the rail, over a night after November 15th until near the end of March. Indeed, the ground is sealed up during most of that period, buried in trackless snow, or stony with impenetrable ice, or both. Of course, a vast deal of out-door work accumulates, and crowds into the five or six weeks between the setting-in of mild weather about March 21st and the unfolding of buds and blossoms about May 10th. During this brief season the ground is generally wet and soft, and always cold. Often there are night frosts, which wring the moisture, as it were, out of the soil, and leave a cold slippery slush on the surface during the next day.

There is, however, a time in the lovely Indian summer of October, when the air and the soil are balmy as if wafted from Paradise; and thus we do have glimpses of Paradise, in one way or another, everywhere on earth, if only in youthful love—

"That one sweet plant which, piteous Heaven agreeing,
Man brought with him through Eden's closing gate."

A time—I begin again—to plant, and I will speak of it presently; but while we have our feet in the chill mire of American May I will say out my say about it first. This is our only time to remove and plant out trees with thin bark, tender roots, or leafy (evergreen) trees with thin open bark; as the Peach will shrivel before spring if planted in the autumn, so that if

the roots survive to supply sap, the stems cannot convey it. Fleshy tender roots, as of Tulip trees, *Magnolias*, *Gleditschias*, &c., decay under the long stagnation, even if frost does not reach them. Evergreens planted in autumn in open unsheltered places, are sure to have their leaves burned off by the combined attacks of the winter winds, the March sun, and the torpor of the ice-cased roots. They are usually planted in May, after all planting of deciduous trees is over. It must be remembered that the sun in the middle States has 11° higher altitude than in England, and that the sky obscures it less.

So the gardener has pretty strong motives for taking time by the forelock; and in that sweet October time to which I have referred, full six months before the chill season just alluded to, he goes earnestly to work to relieve the pressure of the spring. Everything that will endure covering up with soil, all deciduous cuttings, are made and put in, or should be made and put in, as soon as natural ripening or the effects of early frosts have taken off the foliage. All trees and shrubs capable of enduring the winter are planted so early in the dry warm soil that new roots often form. Of course, close packing and moulding-up of the ground is necessary to keep all dry and warm. This is rendered essential, because, if the earth is left loose and becomes charged with water, "heaving-out" is sure to occur. Stakes, posts, and taper fusiform roots, if not entirely covered with soil, are drawn out and laid over on the surface of the soil, as if done by hand. The powerful March sun strips off the protective mantle of snow, and, by thawing the soil daily which has been "heaved" by the expanding influence of the previous night's frost, allows it to subside; but the plant, unless held down to the unfrozen substratum of soil by good strong side roots, goes up with the soil, but has not gravity enough to come down again with it. The preventives of this evil are good drainage and early compacting the soil before winter, with the complete covering-over of all cuttings or seedlings liable from their forms to be lifted out. Soils on which it is apt to occur are best avoided.

It should be added in regard to evergreens, that when they are to be removed but a short distance it is often practicable to remove them in the latter part of August, about the time at which occur the fall rains, that end the droughts of summer. The same season serves for the division and setting-out of herbaceous perennials, and for sowing Wheat and Rye, planting Strawberry beds, &c., all of which plants must have time to root well and grasp the soil firmly before winter, in order to retain their hold till spring.

Very few indeed of the broad-leaved evergreens which shelter English homes so charmingly in winter, can endure the American climate at all in the open air, although many Firs are finer than here. The Laurels, Hollies, Aueubas, Bay, and *Laurustinus* fail entirely and are never seen. Even the Iries, Yews, Box, Mahonias, Lavender, and Rosemary perish, excepting in moist sheltered places, and where well protected from the winds of winter and the sun of spring. Many of the tenants of the coldest driest hills in Great Britain, and the humble tenants of dry hedgebanks, perish as of consumption when their long—their leaves—are exposed to American air. Such are Heaths, Primroses, and European Gooseberries and Grapes. It would be interesting to hear a microscopist's report on the difference of leaf-structure between American and English species of the same genus. In mountain gaps where streams of water supply moisture to the air, and overarching trees and rocks yield shade, and where the mineral soil is simple argil and sand, *Rhododendrons*, *Kalmias*, trailing Yews, and dwarf evergreens hold court in splendour under the shade of luxuriant Firs and Hemlock Spruces, such as are not to be seen here but in caricature, and are there rare sights treasured in Nature's recesses in the wilderness, and enjoyed by "campers-out" in the hunting season in the lovely Indian summer time.—PENNSYLVANIA.

LICHENS ON FRUIT AND OTHER TREES.

THE rapid increase of Lichens on trees has been fairly pointed out by one of your correspondents. Having lived in countries where they are found in far greater abundance than in England, perhaps a few remarks upon the subject may not be uninteresting.

I question very much if there is any country in which so much Lichen is met with as in New Zealand. No one who has been in the bush can ever forget the picturesque appearance produced by the hanging Lichens, and the pendulous fronds of

Asplenium flaccidum and *Hymenophyllum pulcherrimum* on the boughs of so many of the trees. Vegetation is luxuriant in the bush, water most plentiful. Many charming varieties of *Hymenophyllum*, such as *crispatum*, *demissum*, *multifidum*, and lovely species of *Mosses*—for example, *Hypnum marginatum*, *Omalia pulchella* and *falcifolia*, &c., with countless varieties of *Jungermannias* literally clothe the ground; and in these damp and dark bushes we find the much-coveted *Todea superba* and *hymenophylloides*, growing to the height of 3 feet, as plentifully as the *Athyrium Filix-femina* does with us here.

Now, it certainly cannot be a dry atmosphere which causes Lichens to thrive so marvellously in these places, for the bushes are particularly moist; and I can scarcely fall in with your correspondent's views respecting the sea air laden with saline matter being very unfavourable to the growth of Lichens. For instance, anyone acquainted with Auckland will be familiar with the Domain, which is only a few hundred yards from the sea. At one of the entrances to the gardens is an orchard, and all the fruit trees are completely clothed with Lichens, *Usnea barbata* being very conspicuous. On the road to Onehunga, at the base of the extinct volcano Mount Wellington, huge blocks of scoria lie scattered in all directions covered very thickly with Lichens, especially with *Stereocaulon ramulosum*. This part is exposed to the sea breezes from both east and west coasts.

One may judge how favourable the climate of New Zealand is to the growth of Lichens and Mosses from the fact that I collected in a short time ninety species of the former and a hundred of the latter. I also found eighty species of Ferns. I am inclined to think, from all I have seen, that dampness is conducive to the growth of Lichens, and that sea air is not destructive to this class of plants or Mosses.—RANGITIRA.

NOTES AND GLEANINGS.

We are desired by the representatives of the Horticultural Society of Russia, to request those gentlemen who propose to exhibit at the forthcoming INTERNATIONAL HORTICULTURAL EXHIBITION at St. PETERSBURG, and also those who intend taking part in the Botanical Congress, to forward their names, and a statement of what they intend to exhibit, without delay to one or other of the following gentlemen:—Dr. Masters, *Gardeners' Chronicle* Office; Dr. Hogg, of *THE JOURNAL OF HORTICULTURE*; or Mr. H. J. Veitch, King's Road, Chelsea. The arrangements to be made depend materially on the number of exhibitors and visitors. The English railway companies decline to make any concession, but it is expected that the Belgian railway companies will make liberal arrangements of which British exhibitors may avail themselves. The Horticultural Society of Russia states that railway transit is the only reliable method of transport, as the sea carriage is uncertain, on account of the block-ice from Lake Ladoga, which, even till the middle of May, often bars the Bay of St. Petersburg. At the border stations (Wirballen and Granize) of the two principal railway routes to Russia, representatives of the Society will attend, to see that all objects for exhibition are immediately transmitted, and also to advise and assist gentlemen proceeding to the Exhibition and Congress. All objects addressed to the "Internationale Ausstellung von Gegenständen des Gartenbanes in St. Petersburg," will be forwarded to the place of exhibition without being opened on the border. Objects entered for exhibition will be received after the 2nd of May. All plants intended for exhibition must be in St. Petersburg by the 14th of May, because the Prize Committee assembles on the 16th, the day before the opening. Plants arriving in bud will be carried to a special house to bring them into flower for the Show. All foreign guests will be received at the railway stations in St. Petersburg by members of the "Commission for the Reception of Guests," by whom all necessary information respecting lodgings, &c., will be communicated. Any of the foreign visitors who may wish to secure apartments beforehand can either address themselves to the "Commission der Internationalen Ausstellung von Gegenständen des Gartenbanes in St. Petersburg," or place themselves in communication with one of the representatives of the Society. We may add that the average price of lodgings in St. Petersburg is from 3½ francs per day for bed room, attendance, and coffee; and that the Commission for the reception of guests will take measures to ensure proper attention to the wishes of visitors. All exhibitors, and members of the Prize Committee and Congress, will re-

ceive personal cards entitling themselves and their effects to the reduction in fares that will be conceded in their behalf.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE operations recommended in former calendars, if not already performed, should be proceeded with at once. Trench and otherwise prepare ground for plantations of *Rhubarb* and *Sea-kale*; transplant *Lettuces* that have stood the winter in beds; plant the principal crop of Ash-leaved or other early *Potatoes*; and make fresh plantations of *Sorrel*—the French *Sorrel* is much the best. Fork up or otherwise loosen the surface of the ground amongst all growing crops, to admit the air and otherwise sweeten and pulverise the soil, and besides these advantages the crops look better than when the crust of the earth in which they stand has all the appearance of a highway. The chief rule to be observed with all annual vegetables, is never to have two crops of the same class directly following each other. Though excellent plans of rotation may be laid down, yet the period that will elapse before the ground is again occupied by a similar crop will depend upon the wants of the establishment and the quantity of ground at the disposal of the gardener. Those who require to have several crops on the ground at the same time, will find that Celery is a good preparation for Carrots, Turnips, Parsnips, Onions, and early Cauliflowers, or for Peas with Potatoes and Winter Greens, or Broccoli, between the rows. Autumn-sown Onions may be succeeded by Spinach or Lettuce, and early Cauliflowers by autumn Onions. Spring-sown Onions will be advantageously succeeded by Cabbages in beds, with Scarlet Runners between; and if the Cabbages stand all summer and the following winter, the ground in the spring will come in along with the Broccoli ground for Celery, Potatoes, and Peas, the early Potatoes being planted in the trenches, and the Peas sown on the ridges.

FRUIT GARDEN.

Proceed with pruning and nailing when not too cold for these operations. If any planting still remains to be done, let it be performed as soon as the ground is in a fit state for that purpose. Do not, as is sometimes done, over-manure, it is a great mistake to encourage the production of gross, long-jointed wood in any stage of the existence of a fruit tree. Wood of this description never becomes thoroughly ripened, and in the case of stone fruits, gum, canker, and premature death, are sometimes the result; while of Pears anything deserving the name of a crop is never obtained till the gross habit induced by planting in over-rich soil has been overcome. Ground intended for fruit trees should first be drained efficiently, and then trenched to the depth of 2 feet; and if the natural soil is found to be too poor for the health and growth of the trees, a sufficient quantity of fresh turfy loam should be added, but rich, stimulating manures should not be used, for they are soon exhausted, and the trees are left to depend upon the natural soil for their support, and when treated in this way never give satisfaction.

FLOWER GARDEN.

Bourbon, Tea-scented, and other tender Roses, may now, as the weather is favourable, be pruned, and the beds manured and lightly forked. Roses, however, do not dislike a rather firm soil, and care should be taken not to injure their roots by forking or digging too much. The best manure for them is well-rotted cow dung, which should be applied after carefully loosening the soil, and an inch or two of fresh mould sprinkled over it will obviate any unpleasant appearance it might otherwise present if kept near the surface. As before observed, see that all planting is completed forthwith. Improve as much as possible all outlines. Plant fresh masses or groups when necessary, and introduce specimen plants where fitting opportunities offer. Much mischief is done by planting single specimens in recesses; these should be carefully preserved, as a general rule, to give deep shadows, and to throw the prominent features into bold relief.

GREENHOUSE AND CONSERVATORY.

Camellias done blooming should, if possible, be removed forthwith to some of the houses at work; a moist atmosphere, a temperature averaging 65°, and a canvas shading overhead are the requisites in order to cause them to produce wood freely and large leaves. The shading must by no means be neglected. Climbers in the conservatory should have a thorough dressing about this period, cutting away weak and decayed wood, and shortening back shoots (to furnish bark wood) pre-

vicious to the growing season. Some little increase of temperature may now take place, and that chiefly in the afternoon by shutting up early. For mixed greenhouses it is somewhat difficult to give precise directions. Plants of all countries occasionally obtain a place here, and no special treatment in regard to temperature can long be indulged in with impunity. As a principle, therefore, of frequent and somewhat harmless application, I would advise a rather free increase of heat on sunny days early in the afternoon for a few hours, sinking at night to 40° or 45°. Proceed as diligently as possible with the repotting of such of the hardwooded greenhouse plants as require it, so as to afford them every chance of making a vigorous start. Be careful, however, before potting, to have the ball in a moist state, and avoid giving large shifts to weakly growers. Orange trees in tubs or pots should be carefully examined, in order to ascertain whether or not their roots are in a healthy state, and those requiring more room should be shifted at once. In many instances, however, it may not be possible to afford large specimens a shift. In that case, remove as much of the surface soil as can be done without injuring the roots, and replace it with a mixture of loamy turf, broken bones, decayed cow dung, and sand; and see that the balls of the plants are in a quite healthy condition. Manure water is of great service to Orange trees, and may be applied freely at all seasons, particularly when they are starting into growth. This family of plants—that is to say, the varieties of Orange, Lemon, Citron, Lime, and Shaddock, is fully deserving of much more attention in culture.

STOVE.

Some little increase of temperature may also take place here, and that too in the afternoon, by shutting up early, and using plenty of moisture, taking care to thoroughly dry the foliage previously by means of a free circulation of air. For Orchids, a temperature averaging 65° by day may suffice, allowing it to range to 70° or 75° on sunny afternoons, by closing the house early. Look over the fastenings of those on blocks, or in baskets, and renew the wires where necessary. Fasten a little fresh material on those not to be shifted, but beware of burying the buds on the eve of their vegetating. Apply baits for snails and cockroaches most assiduously, and attend closely to the extirpation of scale. Examine, and shift where necessary, stove plants in general, and cut back some of the kinds after flowering, to produce cuttings.

PITS AND FRAMES.

Attend carefully to the stock of bedding plants, and pot off rooted cuttings as soon as they are fit, encouraging them with gentle bottom heat and careful management to make quick growth, for after this season there is no time to be lost with young stock. *Calceolarias* if well established may be planted out next month should the weather be favourable, in a turf pit, in poor sandy soil, where they can be protected from cold winds; but they must be prepared for this by previously injuring them to full exposure to sun and air whenever the weather will permit.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

With but one bright sunny day—that of the 6th inst.—the work in the kitchen garden has been very little. There has been no lack of vegetables from the open air this winter. Cauliflowers from under protection are nearly over, but Broccoli will soon be coming in plentifully. More as a precaution than from necessity we have placed some strong Lettuces between rows of *Potatoes* in frames, as they will thus be forwarded, and be cleared out before the *Potatoes* take up all the room. The dull weather has caused the *Potatoes* to push higher than we care to see them, notwithstanding plenty of air, and to neutralise this so far we picked out the terminal buds of the shoots. This will cause little or no check, and encourage side shoots rather than inordinate length of the main stems.

Growing such crops in frames has this advantage over growing them in pits, that the soil and young *Potato* shoots can be kept rather close to the glass at first, thus encouraging sturdiness of growth, and then as the shoots gradually lengthen the frame can be raised at the corners. Bricks or blocks of wood are very good for this purpose. We generally keep some bricks handy, which do year after year. When this process is followed it is a good plan to have pieces of board, say 9 inches wide and 15 or 18 inches long, placed flat on the bed, across the angles at the corners of the frame, and these boards will

sustain the bricks or blocks that may be necessary for raising the frame higher. When this is done the outsides should be banked up again to the frame to prevent air, &c., entering there when not wanted.

Planted a large earth pit with *Potatoes*, which we can protect with old sashes, straw covers, &c., laid across, and without any artificial heat, as these will succeed those in 8-inch pots and in frames over slight hotbeds, and come in before those planted close to the bottoms of walls and fences with south, east, and west aspects. The best-looking store *Potatoes* are liable now to be deceptive to purchasers. In several cases that have come under our observation, though the outside of the tuber looked all right, the disease manifested itself in the interior parts. The cutting with the knife was necessary to see the defects. We noticed a fine sample of Regents the other day that showed no appearance of disease until they were cut or cooked.

Gave abundance of air to *Radishes*, took up more *Sea-kale* and *Rhubarb* to place in the Mushroom house, sowed Dwarf *Kidney Beans* in heat, daubed with flowers of sulphur the walls of the pit where the plants are yielding, to keep thrips and red spider at a distance; potted young *Cucumber* plants in a dung frame, and cleaned the glass, to enable the plants to obtain all the light possible in this dull weather. Where economy is an object, even in hot-water pits, we prefer that the young plants should become strong in dung heat before being planted out where the heat is to be given by flues or hot water. A two-light box will hold a considerable number of plants, and before being wanted for the *Cucumber* plants, will be useful for cuttings and bringing on *Hyacinths*. When the *Cucumber* plants are small one light may be devoted to them, with a division between the two lights, and then more air may be given to the *Hyacinths* or cuttings. Before *Hyacinths* are moved to a greenhouse or sitting-room they should be raised out of the bed for a day or two, and more air given to them before removal. It is an error to allow these to remain until the flowers are all, or nearly all, expanded. Then, no doubt, the spikes will look better, but it will soon begin to fade. When the places where the bulbs are moved to is warm enough to continue healthy growth, it is more pleasing to see fresh florets opening every day, and therefore the plants may be moved when a few of the lower florets are expanded.

Though not belonging to this department, we may here state in reference to some remarks on the position of *bulbs* in houses, that a lady, we presume, writes to say, "That if I choose to have blooming *Hyacinths* even in dark passages, or in corners of rooms farthest removed from the light of windows, what is that to anybody?" What, indeed! we also reiterate. Surely in such matters one may follow his or her own taste and inclination. The healthy influence of plants under such circumstances is, however, quite a different affair. We feel assured all the same that no *Hyacinth*, and no other plant that naturally rejoices in the light, would ever grow in such positions if its inclinations were consulted. According to the time that such bulbs are kept in dark places will they be of little or no use afterwards for future blooming. This latter fact may well be kept in mind.

Rotten and decaying spray along with tree leaves for hotbeds. An "OLD FRIEND" tells us "that in clearing out an old place he has some waggonloads of this material, rotten, half-rotten, and fresh leaves in about equal proportions, and the half or rather more consists of twigs and short branches, from the thickness of a quill to that of the finger—some rotten or partly rotten, and others fresh, and he wants to know if such materials would be of any use for a mild lasting hotbed. We frequently in clearing out obtain a few cartloads of similar materials, and our experience enables us to say that hardly any decomposing substance could be better for the purpose. The bits of wood keep the bed from becoming too compact, and the decomposition, therefore, and the heat thus produced, proceed more gradually; so the sticks answer the purpose of faggots in beds as used by our old gardeners. Let us guard our reader, however, from one unseen source of danger, and that is the production of fungus from the half-rotten leaves and partly-rotten wood. In such cases we like to pile the heap compactly together until it heats somewhat strongly, before spreading it out into a bed and making it up in the regular way. We have no difficulty in this respect, as we can place some stable manure either beneath or incorporated with the heap, and thus, if we obtain a good heat in the heap, the spores, &c., of the fungus will be destroyed. With these precautions and the help of a little stable manure or other fermenting substance,

no material can be better for lasting hotbeds. When done with for that purpose nothing can be more valuable for composts and manures. Without such a precaution as allowing the heap to heat well at first, there is a first and a second danger. The first is, though you may have a genial lasting heat for whatever you use it, there is no other material that is so likely to be stored with the spores and the incipient mycelium of fungi. A mild heat will encourage the rapid development of these, a strong heat will destroy them. A mild heat will so encourage them to grow, that they will not only spread through the bed, but will affect the roots of the plants growing upon it. Thus we have had Cucumbers, Potatoes, Turnips, &c., injured. The second evil is, that although such heaps when they have parted with their heat and become partly decomposed, are most useful as leaf mould for composts, and entering as part into all our soils for pot plants, we have had heaps which we durst not touch for these purposes, so thoroughly were they pervaded by the spawn of fungi, though almost imperceptible without a microscope. Wherever there is a doubt, soil of this description before being used ought to be well heated over a furnace, or placed in a barrel of very hot water, and then dried and exposed to the air before being used.

Some fungi, if their mycelium occupy the soil, seem to do little injury to crops, but others seem to tolerate no rivals. We lately mentioned that some Cucumbers that bore heavily about Christmas seemed all at once to have lost their vigour, which they generally do when fruited hard before the turn of the day; but in taking them out we found another evil, half an inch or so beneath the surface of the bed and for a depth of 2 or 3 inches, the bed was a mass of thready spawn, and this, we have no doubt, was the result of using leaf mould as a component part of a rich top-dressing. As far as this spawn extended the roots were unhealthy. We believe that thousands of fruit trees, Vines, &c., have suffered by an excess of kindness from using leaf mould and half-rotten leaves in the compost of the borders. Mildew on the roots becomes then more dangerous than mildew on the twigs and leaves. Quicklime is a great enemy to all the fungus tribe that we have come in contact with; but a strong fiery heat seems to be the most successful opponent. A mild genial heat, such as the heat in a Mushroom bed, seems most to promote their extension. Heaps collected from old shrubberies and woodlands, and consisting of such mixtures as our correspondent alludes to, are much more liable to fungus than the fresh-fallen leaves of the present season, though even they and their change into leaf mould are to be watched. A good heat in a hotbed will make them safe for the crops accelerated and safe afterwards.

In other departments our work has been much as stated last week. In the fruit garden went on pruning, cleaning walls, and applying some fermenting material to a Vine border, which, being covered, will be used for bringing on numbers of bedding plants, which most likely we will place in little square pieces of turf, as an ease to our pots, and so far dispensing with them.

In the pleasure grounds and preserves our chief work has been planting, transplanting, cutting down, pruning Laurels, &c., and fresh turling. In some cases, contrary to a rule recently adverted to, the work could not be done without making work which might have been avoided if performed in more suitable weather; but then two other reasons helped to mitigate this evil. The fine weather, when it comes, will bring quite enough to do without any extra work, and at present labour is, more than desirable, too plentiful and easy to be had in this neighbourhood. In turling we have for the first time, owing to the wet, enlisted a new agent to help us, though it may not be new to others—namely, finely sifted coal ashes, of which we happened to have a large heap, consisting of what had passed through a fine sieve, the rest being transferred to the furnaces. A sprinkling of this on the surface enabled us to get the surface more easily levelled and made fine than we otherwise could have done with the wet soil, and the turf was thus better laid.

—R. F.

TRADE CATALOGUES RECEIVED.

William Hooper, New Wandsworth, London, S.W.—*Catalogue of Kitchen Garden and Flower Seeds.*

W. Rollison & Sons, Tooting, London.—*General Seed Catalogue, comprising a list of Sub-tropical and Ornamental-foliaged Plants.*

D. G. McKay, Sudbury, Suffolk.—*Catalogue of Select Vegetable and Flower Seeds.*

COVENT GARDEN MARKET.—FEBRUARY 10.

The general demand has slightly improved, but not sufficiently to influence prices to any extent, there being a good supply kept up both of home-grown and foreign produce.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	2	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	6	0
Chestnuts.....bush.	10	0	15	0	Peaches.....doz.	0	0	0	0
Currants.....½ sieve	0	0	0	0	Pears (dessert).....doz.	4	0	8	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	8	0
Figs.....doz.	0	0	0	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	0	9	1	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart.	0	0	0	0	Strawberries.....oz.	3	0	0	0
Grapes,Hothouse.....lb.	6	0	8	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	2	0	4	0
Beans, Kidney.....hd.	2	0	8	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	8	0	Mustd. & Cress,punnet	0	2	0	3
Broccoli.....bunch	1	0	2	0	Onions.....bushel	6	0	8	0
Brs. Sprouts ½ sieve	2	0	0	0	Parsley.....sieve	6	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capicums.....100	0	0	0	0	Peas.....quart.	0	0	0	0
Carrots.....bunch	0	4	0	8	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	2	6	4	0	Kidney.....do.	4	0	7	0
Celery.....bunch	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	2	0	4	0	Rhubarb.....bunch	0	9	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	8	0	0	Tomatoes.....doz.	1	0	2	0
Horse-radish.....bunch	3	0	5	0	Turnips.....bunch	0	6	0	0

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

Books (*A Subscriber*).—You could obtain the book through any bookseller. We do not know the price. (*N.R.*).—"Fruit Gardening for the Many." You can have it sent post free from our office, if you enclose five stamps with your address.

CUCUMBERS (*Odumdaroo*).—They can be grown on a dunghill covered with soil. Parsley is not poisonous to Rabbits.

VINES (*G.W.*).—The Vines will do planted in the floor of the house, with a 2-feet opening round the stems, if you have secured drainage; and though the soil may be good, we would advise at least a portion of fresh to be incorporated with it.

STOVE FOR GREENHOUSE (*A Five-years Subscriber*).—Hays's stove and fuel cannot now be obtained. We have no faith in any stove where there is no outlet for the products of combustion, when tender plants are concerned. A small stove, the fireplace lined with firebrick, would be ample for your small place, the cost being about 50s. There is quite an unnecessary panic about having a small pipe, say 3 inches in diameter, from such a stove. Have one with the place for the chimney at one side. An angular elbow-piece to fit on, a foot each way, will cost from 2s. to 2s. 6d.; and the upright plate-iron pipe will cost about 1s. per foot. The pipe should go through the roof or wall, and if through the former, a small cowl on the top will cost about 1s. 6d. or 2s., and all can be taken away when not wanted. The stove is little of an eyesore, and if not liked it might be concealed. We saw one close to the hack wall under the stage, and a pipe went through the wall, and a short upright one outside, that did well. See page 70, and "Doings of the Last Week." (*A.P.*).—Moist heated air certainly will not prevent the emission of carbonic acid from any stove. We do not know that which you name, but unless it has a flue or pipe do not admit it into your greenhouse.

GREENHOUSE (*J. R. Freshfield*).—Your house would look better if to the old 16-feet length you added two or three sheets of 4 feet in width, making the house either 24 or 28 feet in length. Except on account of having the roof all alike, there is no objection to having three sashes of 3 feet each, so as to make the house 25 feet in length; and three Vines would succeed very well in that space, training one up the centre of each light. We think the part for flowers alone should be next the doorway, and it would be more convenient if you had a doorway at each end. We would divide the house by a partition about the middle. You might then have four Vines in theinery, and you might also have some in the flower part, bearing in mind, however, that the flowers would be too much shaded after the Vines were in full leaf. By this means you could force.

the vinery, and the Vines in the greenhouse would come in with greenhouse heat about September. As you cannot dig down for a furnace-hole, owing to water, we would at once do away with all your difficulties about the path, crossing, &c., by placing the furnace and boiler outside at the back wall, opposite the proposed division in the house; and then with a T-junction fixed on, and a flow and return, and a stopcock for each division, you could heat each place separately, or both together. In each case we would take the pipes across, along the front, in-ile of the pathway, along the further end, and if you liked along the back to the boiler. The pipes would thus be all under the stage for plants. You can have the plan returned if you enclose a ready-directed and stamped envelope.

BOILER (J. Lees).—There is nothing new in your idea of a boiler. It is just a tubular saddle-back. The simpler boilers are the better. The more joints the more danger of leaking.

SWELLINGS ON APPLE-TREE SHOOTS (T.).—They are the consequences of the punctures inflicted by the American blight (*Aphis lanigera*). The parent aphides are now wintering on the roots of the tree, and will re-appear in the spring.

QUEEN ANNE'S POCKET MELON (A Constant Reader).—Any seedsman who advertises in our columns could obtain it for you. It is worthless as a fruit.

BUDDING ROSES (A Novice).—"Scrape away the earth, and when the skin will run bud the Rose in the old wood of the stock, not in the wood of the current year. If, however, the stock will not run, bud the Rose in the wood of the current year as low as you can. The Roses called Noisettes take their name from Philip Noisette, who introduced them. The term is applied to cluster-flowered Roses. Some, however, of the family are Noisette in family but not in character."—W. F. RADCLIFFE."

GRAFTING AND PRUNING ROSES (A Subscriber from the First).—"I do not practise grafting. I prefer Roses budded, as the wind, when the union is not intimate, is apt to break the tree down. The time, I think, is come to prune Roses. If the frost should cut off the shoots, other eyes will break to take their place. I do not think we prune our Roses early enough for their good."—W. F. RADCLIFFE."

POTATOES WITH LONG SPROUTS (Sutton Abbott).—"Unpack your Myatt's Prolific Potatoes immediately and carefully from the dry cocoanut dust; leave one shoot only on each tuber, and then lay them singly on the floor of the loft for a week or so, to allow the young shoots to gain sturdiness by becoming slightly greened. If there are at hand two or more dozen flower pots which measure from 10 inches to 7 inches in diameter, wash them clean, put in drainage, cover it with 2 inches of light rich soil neither wet nor dry, and place one good-sized Potato, or two if small, upon it. Be careful not to break or damage the shoots, which must be held in an upright position whilst filling the pot with earth to within half an inch of the brim. The 12-inch-long shoots must be given to the deepest flower pots; and if they can be placed in an orchard house and be duly watered and protected from frosts, doubtless you would obtain early Potatoes much sooner than your neighbours unless they forced their crop. In lieu of flower pots and the orchard house, you may employ boxes drained and filled with soil, plant the tubers in them, and place them out of the reach of frost in any sunny corner. In this case plant the tubers about a foot apart, and to keep up a succession plant more in a warm border at the usual distances, but lay the long shoots in sloping, and do not cover them more than 3 inches deep, leaving an inch or two of the crowns of the young shoots peeping from the soil. Of course, these must be protected with mats, &c., as occasion may render necessary."—UPWARDS AND ONWARDS."

GARDENIA CULTURE (M. H.).—The Gardenias require a stove temperature, and should have a light and rather airy situation, keeping them as near the glass as practicable. A compost of two-thirds sandy fibrous peat, and one-third light loam from rotted turves, with a free admixture of silver sand, will grow them well. Good drainage is necessary. Any potting that may be required should be done as soon as the plants begin to grow, giving but small shifts, and not potting too often, as they do not flower freely unless the pots are full of roots; indeed, if overpotted they make too much growth, or the soil becomes saturated when there is a large mass of it, and it is owing to the inactive state of the roots that the buds are so liable to go off. To obviate this, some consider bottom heat necessary, and it is very desirable to give the plants bottom heat when making new growths, and when they are desired to swell their buds for blooming, encouraging them with a moist heat, and a plentiful supply of water, both when growing, and forming and swelling their buds. At no time ought they to be watered before the soil requires it, as nothing is so injurious to them as keeping the soil in a saturated state, and yet water should be supplied before the foliage flags, and in sufficient quantity to show itself at the drainage. It is essential to secure a good growth, and have it well matured by exposure to light and air and diminishing the supply of water; also to afford a slight increase of temperature and mild bottom heat to bring them into bloom.

FINE-FOLIAGED PLANTS FOR OUT-DOOR FERNERY (St Dennis).—The following may suit you for the summer months only:—*Agave americana* aureo-variegata, *Agapanthus embellatus* variegatus, *Aralia Sieboldi* variegata, *Arundo donax* variegata, *Bambusa Fortunei* variegata, *Dracena australis*, *D. Veitchii*, *D. Banksii*, *D. stricta* (ferrea variegata), *D. draco*, *D. terminalis*, *Cordylina indivisa*, *Eurya latifolia* variegata, *Hydrangea japonica* variegata, *Osmorhiza ilicifolia* nureus variegatus, and *O. ilicifolia* variegatus, *Phormium tenax* variegatum, *Rhapis humilis* variegata, *Saxifraga Fortunei*, *S. sarmentosa*, *S. tricolor*, *Serissa foetida* variegata, *Veronica Andersoni* variegata, *Yucca aloifolia* variegata, and *Y. filamentosa* variegata.

SUBTROPICAL PLANTS FOR SMALL BED (Idem).—*Acacia lophantha* for centre, hard round of *Canua zebrina*, another band of *Phormium tenax*, and a third band of *Acanthus latifolius*, edged with the *Pelargonium* you name. Perhaps the finest green-foliaged *Caena* is *musculosa*; a granite major having green leaves, and *grandiflora* floribunda having dark foliage, are also fine.

GROUND VINERY (Idem).—"The Vine Manual" has a chapter on the ground vinery, and a drawing of one. It may be had post free from our office for thirty-two stamps.

ROSES FOR A PILLAR (Scotus).—"For a pillar facing west:—*White*: *Aicidal* or *Marguerite Bonnet*. *Red*: *Dac de Cozes* or *Charles Lefebvre*. *Aicidal* may not open in Scotland. If a small flower is not objected to, *Aimée Vibert* would do. As *Pierre Notting* does not open well in Scot-

land, and *Jules Margottin* does not give you satisfaction, supply their places with *Alfred Colomb* and *Antoine Ducher*. *Madame Charles Crapelet*, fine, but not quite full, would be sure to open. *General Jacqueminot* is a good Rose for you, as it is a sure opener, and quickly reproduces its blooms. Whether the *Rose* or *Manetti* is planted in spring or autumn, after it is established, as a rule, reduce it all over one-third. If the plant is small you must use your own judgment. *General Jacqueminot* would make a good red pillar Rose.—W. F. RADCLIFFE."

LAWN MOWER (T. Redfern).—They all do their work well if properly managed. We cannot recommend any one in preference to the others.

CYCLAMEN PERSICUM (G. Edgerton).—Your seedlings twelve months old, whether we consider the size and tints of the flowers, their profusion, or their bold elevation above the handsome foliage, are some of the best we ever saw.

HEATING A VINERY (A. Bryan).—If your vinery, containing 4680 cubic feet, is at all lofty, the two 4-inch pipes all round will not be sufficient for very early forcing, but would do if beginning from January to February. To begin in November the piping would require to be increased from one-third to one-half.

HAY'S PATENT STOVE (R. J. S.).—We do not know where fuel for it can be obtained. Peat charcoal, perhaps, would answer, and it is made somewhere in the north of England. It ought to be advertised.

FLOWER-GARDEN PLAN (Fructus).—Both proposed plans are good, but, if anything, we prefer No. 2, provided the 4 and 5 beds of *Calceolarias* are edged with purple or silver, as low-growing *Verbenas* of that colour. The plan then would be unique. (R. W.).—No. 3 is the central clump; and as you propose to edge it with *Lobelia*, all the five clumps would have dark edgings. Suppose you were to plant thus, with the materials you have—No. 3, *Tom Thumb Pelargonium*, hand of *Bijou*; 2, 2, *Cloth of Gold*, edged with *Oxalis tropaeoloides*; 1 and 4, *Centre of Delphinium formosum* with two or three plants of *Ageratum mexicanum*, to make sure of the grey blue until frost, then *Treutman Rose Pelargonium*, then *Stella*, frosted with *Ribbon Grass* kept low, and then a good band of blue *Lobelia*. We would not trouble about raising *Cypripedium* from seed. You will succeed well with the *Lobelia* in your dung bed, but had better sow soon. You may move the *Thorn* tree now, but you would be more sure of success next October or November. If you move, take care of the roots. See last week's "Doings."

MELON FRAME (A Subscriber).—We consider 8 feet too wide for a movable frame, and would not recommend a greater width than 6 or 7 feet, and we think 3-feet lights quite large enough, though you may have them 3 feet 6 inches. The frame should be 18 inches deep in front, and 2 feet 3 inches at the back, but the hotbed ought to be higher or deeper at back by 1 foot than in front. The Melon we do not know from the description given.

RIVINA LEVIS CULTURE (Idem).—It is an evergreen undershrub, and needs an intermediate house or a stove temperature. The seeds may be sown now in sandy soil in a brisk bottom heat of 75°, and in a corresponding top heat; when the seedlings are a few inches high prick or pot them off singly in small pots, and grow them in the stove, taking out the points of the plants when they are from 3 to 4 inches high. As often as the pots become full of roots transfer the plants to larger pots, and afford a light airy position in the stove or vinery, stopping the shoots frequently so as to produce a close compact plant. In winter keep dry, but not so much so as to affect the foliage, and in February shake the plant out of the soil and place in a smaller pot; if the plant is at all straggling prune it well in, and encourage growth with a gentle bottom heat and moist atmosphere. Shift the plant into its blooming-pot when that into which it was shifted in February becomes filled with roots, and see that the shoots are kept in order, but shortening ought not to be practised after May. The plants have white or pinkish flowers, which are succeeded by orange-coloured berries, and it is the latter that constitute its chief attraction.

LAWN WEEDY AND BARE (Thornton Heath).—It is not necessary to mow the lawn before scratching with an iron rake, and top-dressing; but we think it desirable to give the lawn a light raking after sowing the lawn grass and Clover seeds, and then roll well.

VARIOUS (A. Y.).—*Anemones* require a good, rich, light soil. There are two seasons for planting, October and the end of January. Those who planted at the former season will now have good plants with pretty-ripened leaves. The plants should now have a top-dressing, if not already given, of decayed leaves or leaf mould, which need not be more than about half an inch thick. It will afford some protection to the roots and foliage. If planting has not been already performed it must not be longer delayed. Plant 2 inches deep, and from 7 to 9 inches apart, pressing lightly and taking care to place the right side upwards. *Ranunculus* delight in a deep, rich, heavy, and moist soil, but it must be well drained. It is now quite late enough to plant, but it may yet be done. The best manure is cow dung, though well-rotted hotbed manure will do, but for light soils cow dung is very desirable. *Yucca filamentosa* is, in most situations, quite hardy, and requires a moderately rich well-drained soil. We do not know of a process whereby it may be induced to flower. The *Pampas Grass* should have a compost of two parts loam from turf, one part leaf mould, and one part well-rotted manure; and there should be no stagnant water in the soil. In summer water freely during dry weather, and once or twice a week with liquid manure.

HOLLY IN FLOWER (A. Henderson).—It is rather unusual for the Holly to flower at this season, but similar instances are not rare.

GRASS CLOSE TO STEMS OF EVERGREENS (P. H.).—It is well to allow a small space of soil around the stems of evergreens on grass for a time after planting, but the bare spaces do not look pleasing, and after two or three years the grass should be allowed to grow around the shrubs as closely as it will.

PELARGONIUMS TO FLOWER IN JUNE (W. Archer).—You will not have any difficulty with the vigorous plants lately received, as you should now stop them, and again at the end of March or early in April, shifting them into their blooming-pots early in April, and you can retard them by placing them in a cold pit in May, and shade from bright sun so as to keep them cool.

PLANTS FOR WALL IN CONSERVATORY AND STOVE (S. C. Hincks).—For the conservatory—*Luculia gratissima*, *Hai rothamius elegans*, *Cestrum aurantiacum*, *Tacsonia Van-Volxemi*, *Lapageria rosea*, and *Passiflora Clowesia*. For stove—*Allamanda grandiflora*, *Cissus discolor*, *Stepha-*

notis floribunda, Hoya carnosa, Passiflora quadrangularis, and Schubertia graveolens.

CAMELIAS LEGGY (A. M. T.).—The plants should be well cut-in before they begin to grow, and encouraged with a moist atmosphere and brisk heat of from 50° to 55° at night, and from 65° to 70° by day, affording a slight shade from bright sun, the plants being sprinkled overhead morning and evening with water, and when they have shoots a few inches long repot, shading for a time after potting, and keeping rather close and moist.

RHODODENDRONS LEGGY (Idem).—You may cut down the Rhododendrons, and they will start from the ground. It should be done early in May, or it may be done immediately after flowering, cutting them to the form required.

ROSES ON WALLS (Q. Q.).—“Roses suitable for walls never want much pruning. Simply thin out weak shoots and cut the stronger side branches to a good eye in ripened wood, and take off the tops of the leaders similarly. My south frontage is a long one, and wholly planted with Tea and Tea-scented Noisettes, in front of which are placed, on the lawn, these Manetti-stocked Roses—viz., Charles Lefebvre, Maurice Bernardin, Duc de Cazos, and Prince Camille de Rohan. They are all very forward. I took off last week the sheep hurdles which have been leaning all winter endways against the wall Roses. Some of the shoots of such as Céline Forestier are a foot long, and have Roses formed. I shall let all remain till I see what the frost (if any), will do, and then cut out damages and otherwise prune the trees, leaving on what is not damaged. I have not

yet moved any of the manetti round my Roses. Wait for dry weather and then do it, as the ground will work better. As soon as March arrives, if weather permit, cut the Manetti wood from the budded stocks. Till then, if severe weather set in, bed-up with litter, or straw. I have not yet thinned out any of my Manetti Roses. I, one year, at Rushton, did not prune till the 11th of May, and succeeded well.—W. F. RADCLIFFE.”

NOMENCLATURE OF FERNS (Pteridophytiv).—It is quite true that writers on foreign Ferns differ much in their nomenclature, but so do other botanists about other plants, and they are still more reprehensible for elevating every abnormal frond into a variety. Such men are great only in small things. Yet to publish your vituperation would do no good, and is unjust as regards those who are entitled to the name of “gardener.”

NAMES OF PLANTS (F. B.).—Chimonanthus fragrans grandiflorus. It is propagated by layers early in autumn, and by seeds sown in gentle heat during March. It has also been propagated by cuttings of the young wood of the current year just after it was “set” in July, and furnished with leaves, the cutting not being placed on the bed at the cooler end of a propagating pit. (J. J. S.).—The Oaks are not Mexican, but other North American species. The darker-coloured one is Quercus rubra, and the lighter Q. coccinea. They may both be propagated by grafting them on the common Oak; but it is needless trouble to do so, as trees are easily procurable in any good nursery. (Castleraght).—1, Aspidistra lurida variegata; 2, Sanchezia nobilis variegata; 3, Platycomium alceiorum. (Eastbourne).—1, Chorozema varium. (Tertina).—1, Asplenium forestum; 2, Davallia pulebra; 3, D. chrysophylla; 4, Microsorium inoides; 5, Polypodium (Phymatodes) normale. (C. G.).—Velltheimia viridifolia.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 9th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 3	29.864	29.670	55	45	46	45	S.W.	.10	Boisterous with rain; stormy; densely overcast.
Thurs.. 4	30.168	30.010	58	41	49	45	S.W.	.10	Overcast; cloudy, but fine; very mild, starlight.
Fri.... 5	30.177	31.162	62	33	49	46	S.	.00	Fine, and very mild; very fine; clear and fine.
Sat.... 6	30.082	29.935	58	30	46	46	S.	.00	Clear, and very fine; exceedingly fine; fine and clear.
Sun.... 7	29.811	29.776	54	48	47	46	W.	.00	Exceedingly boisterous; overcast; boisterous and stormy.
Mon.... 8	29.603	29.401	54	46	50	46	S.W.	.02	Clear, brisk wind; boisterous; showery and boisterous.
Tues... 9	29.894	29.606	52	42	50	47	W.	.04	Overcast; showery, brisk wind; clear and fine.
Mean	29.934	29.794	56.14	47.71	48.14	45.86	—	0.26	

POULTRY, BEE, AND PIGEON CHRONICLE.

TRIMMING.

I HAVE read with much interest the remarks of “NEMO” and others, with regard to trimming fowls for exhibition. I fear that the task that they have taken in hand is a most difficult one, as the judges admit that they have not time to scrutinise the pens closely enough to be able to detect every case of trimming. I wrote on this subject some fifteen months ago, and received no reply to my inquiries. For myself, I shall be delighted to see all trimming done away with, but, as I (since I wrote) have sanctioned trimming, I cannot, of course sign the protest which has been sent to me for signature. As I am of opinion that the cleverest trimmer in the world cannot change a bad bird into a good one, I do not think the subject so important as some of your correspondents do.

My trimming has been, I believe, of a mild character, such as the “plucking of an occasional damaged feather.” I have spoken with one of our most eminent judges on this subject, and he appeared to agree with me, that it is impossible entirely to prevent the practice.—ALBERT O. WORTHINGTON, *Burton-on-Trent*.

IN reply to “Y. B. A. Z.,” the contraction he has put upon my letter has arisen through a printer’s error, in running two sentences into one. If he will put a full stop at the end of my remark about dubbing, he will see that when I spoke of fanciers who “could not show their birds with this advantage,” I referred to conditioning, which I intend is just as artificial as the present authorised amount of trimming, and therefore equally to be condemned. I do not, of course, mean that “the pith of condition lies in dubbing,” but allude to that improvement of which I believe any breed is capable by being penned and specially fed some days before being exhibited, and which in Game fowls increases the natural tightness and crispness of the feathers, brightens the colour, and puts a gloss on the feathers, and adds fire and style to the carriage of the bird. In fowl-fancying as in every other fancy, there will be a certain amount of recognised trimming for exhibitions, which is never intended to deceive, and therefore cannot be termed fraudulent.

“Y. B. A. Z.” does not call simple dubbing a deception, but objects to it because a faulty comb may have been removed. Any Game fancier will tell him that a faulty comb is very rare in a Game cock, or at any rate that the combs run very much alike. If Game fowls should ever be exhibited with their combs on, we shall, of course, require a standard of excellence in respect to that particular point. The removal of the small feathers from the face of Spanish and Game is almost as perceptible, and just as little likely to deceive as dubbing. Of course it is a matter of taste, and by this I do not mean a matter of opinion, for I believe there to be a certain standard of good taste with respect to any subject, but, of course, the difficulty is to find it. The

eye of a fancier is accustomed to the present permissible amount of trimming, and he certainly considers it an improvement.

Our most popular poultry judge is careful not to commit himself to any approval of “NEMO’s” sweeping reforms, but most amply indicates himself from any charge of neglect to expose attempts at fraud. If I am not very much mistaken, “NEMO” will have to content himself with drawing the line where I suggest—the punishment of all fraudulent practices, and the continuance of all acknowledged and allowed trimming as practised by all our leading exhibitors. I am well aware that there is much of genuine rascality connected with our poultry shows, and if “NEMO” and “Y. B. A. Z.” can suggest any practical means of making the detection of it more certain, I for one would gladly assist them by any means in my power, pecuniarily or otherwise. At present I think my friends are over-reaching themselves, and so far from the matter being “in a fair way to have some decision made,” we are more at sea than ever, for two fanciers seem entirely agreed on the subject. I hope “Y. B. A. Z.” will now understand my meaning, and that he will allow me to “agree to differ” with him, as I, like himself, have only the good of the fancy at heart, and trust that my motives are equally pure.—BROWN RED.

[Let it be admitted that stronger expressions than were needed may have been used, and that advocates have been indignant with those who differed from them; let it also be admitted that condemnations have been too indiscriminate; and then, after all these admissions, the truth remains unshaken, that birds have been fraudulently altered. To remove a small broken feather is not fraudulent, but to pluck away all the feathers of a vulture hock is fraudulent; to bathe a cock’s comb with an astringent to strengthen it is not fraudulent, but to run pins along the comb to maintain its desired position is fraudulent; to bathe a Spanish cock’s face to diminish the wrinkles covering his eye is not fraudulent, but to paint his face white is fraudulent.]

We might multiply the distinctions, but we have said enough to show that to draw the line requires only the exercise of common sense and common honesty by Judges and Committees to carry out the rule we formerly suggested, and which we are convinced would effectually lessen, if it did not entirely prevent, fraudulent alterations. You cannot compel a man to be honest, but if his dishonesty is rendered an almost certain loss, he will refrain from it.—EDS.]

DISEASED LIVER IN FOWLS.

AT a recent meeting of the Pathological Society, Dr. Crisp exhibited several specimens of tubercle in the common fowl. The birds last year were brought from a district in Suffolk where tubercle among birds was unknown, and after being kept for about six months in a very damp hen-house at Chelsea, their livers, spleens, and mesenteric glands became tuberculated. Dr. Crisp thought these very important specimens, as showing

the effect of a damp and confined atmosphere, one of the most frequent causes of phthisis in the human subject. He had examined many years since a great many of the animals dying at the Regent's Park Gardens—a locality that was damp and foggy—and he came to the conclusion that this state of atmosphere had much to do with the production of tubercle, as it was far less prevalent at the Jardin des Plantes at Paris and in other collections in dry and airy districts. On going over the proportion of cases of phthisis to the population of the 623 districts of England and Wales, he found that a moist and damp atmosphere with a limited circulation of air was a common cause of phthisis. He did not think that the nature of the soil had much to do with it if the country was open and had a free circulation of air.

The President, Dr. Quain, inquired if Dr. Crisp had seen Dr. Buchanan's paper.

Dr. Crisp replied that Dr. Buchanan's inferences were drawn from a part of England only, but his (Dr. Crisp's) included all the districts. He thought that Dr. Buchanan would be obliged to modify many of his opinions. Dr. Crisp, in answer to a gentleman who supported Dr. Buchanan's views, and who said that in a hilly part of Surrey, all clay, phthisis was very prevalent, remarked that in Chelsea, all sand and gravel, the proportions of deaths from phthisis to the population in ten years was 1 in 28; at Hampstead, which was nearly all clay, the proportion was only 1 in 61. Dr. Crisp had inoculated four healthy Pigeons from these fowls. They were killed after six weeks, and no perceptible effect was produced. He had not heard of any examples where the inoculation of tuberculous matter had been before practised on birds.

PORTSMOUTH POULTRY SHOW.

As a first show this was one of the best Exhibitions of poultry we have seen. The arrangements were very good, and the pens in which the fowls were exhibited more commodious than any we can call to mind. They were somewhat higher than the generality of pens, and consequently did not interfere with birds of large size, by bruising combs, &c. It was, we believe, the first time of their being used. As regards attention to the birds the arrangements were perfect, and the visitors were well cared for.

GAME (Black, and other Reds).—1, W. H. Stagg, Netheravon. 2, S. Matthew, Stowmarket. *he*, S. Matthew; H. Lee, Appuldurcombe. *c*, H. Lee.

GAME (Any other variety).—1 and 2, S. Matthew. *he*, T. G. Bognur, Landport; H. Lee. *c*, Rev. G. L. Blaire, Buriton, Petersfield; G. S. Sainsbury, Devizes.

COCHINS (Any variety).—1, J. R. Redbard, Winton. 2, G. Shrimpton, Leighton Buzzard. *he*, G. Shrimpton; G. White, Christchurch; E. R. Gray, Cosham. *c*, A. & R. Ashby, Staines; G. Shrimpton; F. W. Rust, Hastings; J. H. Dawes, Birmingham; C. F. Hore, Tunbridge.

BRAMA POOTRA (Dark).—1 and 2, Rev. J. Ellis, Bracknell. *he*, A. and R. Ashby; W. Dring, Faversham; H. Dowsett, Pleshey; W. Sims, Strand; H. Lee.

BRAMA POOTRA (Light).—1, H. Dowsett. 2, J. Pares, Postford, Guildford. *he*, H. M. Maynard, Holmewood, Ryde. *c*, Miss J. Harvey, Salisbury; F. Crook, Forest Hill.

DORKINGS.—1 and 2, J. Marlin, Claines, Worcester. *he*, St. J. Coventry, Wimborne; Miss M. Hales, Canterbury; Viscount Turnour, Shillingde, Petworth; L. Patton, Hillmore, Taunton. *c*, C. Cork, New Shoreham; A. Stanford, Eatons, Steyning.

SPANISH.—1, J. R. Redbard. *he*, J. R. Redbard; F. Pittis, jun., Newport, Isle of Wight; P. H. Jones, Fulham. *c*, A. & R. Ashby.

HAMBURGS (Gold and Silver-pencilled).—1, Cup for best pen shown, and *c*, F. Pittis, jun. 2, N. Barter, Plymouth.

HAMBURGS (Gold and Silver-spangled).—1, F. Pittis, jun. 2, J. F. Leveridge, Newark. *he*, N. Barter.

FRENCH.—1, Rev. N. J. Ridley, Newbury. *he*, H. M. Maynard. *c*, Mrs. L. Paget.

ANY OTHER VARIETY.—1, J. Hinton, Hinton, Bath. 2, T. P. Edwards, Lyndhurst. *he*, J. Hinton; W. Graham, Buckland; Miss M. Hales; P. H. Jones. *c*, R. C. Forster, Freshford, Bath; W. Weston, Bramley, Guildford; W. Wildev, Cosham; F. Pittis.

GAME BANTAMS.—1 and 2, J. W. Kelleway, Merston, Isle of Wight. *he*, F. Lawrence, Portsea; W. W. Payne, South Launcey; H. Lee; C. F. Hore. *c*, E. Payne, Cardiff; T. Wilkins, Fareham.

BANTAMS (Any variety, except Game).—1, S. A. Wylie, East Monsey. 2, H. M. Maynard. *he*, S. H. Stott, Rochdale. *c*, Lady S. Turnour, Shillingde, Bath.

SELLING CLASS.—*he*, H. Lee (White Cochins); Sir W. P. de Bathe, Chichester (Sebastopol Geese, and Aylesbury Ducks). *c*, Lady S. Turnour; Mrs. Christie (Partridge and Buff Cochins); J. Howard (Peacocks).

PIGEONS.

BARBS.—1, J. H. Ivimey, East Grinstead. 2 and *c*, H. M. Maynard. *he*, J. H. Ivimey; H. Yardley, Birmingham.

CARRIERS.—1, C. Cork, New Shoreham. 2, H. Yardley. *he*, H. M. Maynard.

TUMBLEBILLS.—1 and 2, J. H. Ivimey. *he*, H. Yardley.

FANTAILS.—1, Rev. W. S. Shaw, Bath. 2 and *c*, H. Yardley. *he*, J. F. Loveridge.

ANY OTHER VARIETY.—1, J. H. Ivimey. 2, H. Yardley. *he*, H. M. Maynard; H. Yardley; W. Smith. *c*, H. M. Maynard.

CAGE BIRDS.

NORWICH (Clear Yellow).—1, C. Payne, Buckland. 2, H. Vine. *he*, Miss

E. M. Webber, Southsea; O. Nicholson, Landport. *he*, H. Ashton, Prestwich. *c*, W. Walter, Winchester.

NORWICH (Clear Buff).—1 and 2, H. Vine, East Cowes. *he*, H. Apter, Worthing. *he*, W. Walter.

NORWICH (Evenly Marked Yellow Variegated).—1, O. Nicholson. 2 and *he*, H. Apter. *he*, W. Walter; O. Nicholson.

NORWICH (Evenly Marked or Buff Variegated Buff).—1, 2, and *he*, H. Apter. *he*, W. Walter. *c*, W. B. Howell.

BELGIAN (Clear Yellow).—1, E. Smith, Gosport. 2 and *he*, O. Nicholson. *he*, W. J. Teon, Kettering. *c*, C. Payne; R. Bills, Brighton.

BELGIAN (Clear Buff).—1, C. Payne. 2, O. Nicholson. *he*, R. Bills; O. Nicholson. *c*, A. E. Smith.

BELGIAN (Evenly Marked or Yellow Variegated).—1, O. Nicholson. 2, W. Andrews, Landport.

BELGIAN (Evenly Marked or Buff Variegated).—1 and 2, O. Nicholson. *he*, W. Richardson, Landport.

LIZARD (Golden-spangled).—1, T. Fairbrass, Canterbury. 2, R. Bills. *he*, W. Walter; O. Nicholson. *he*, H. Ashton. *c*, R. Bills.

LIZARD (Silver-spangled).—1, O. Nicholson. 2 and *he*, R. Bills. *he*, H. Ashton. *c*, T. Fairbrass.

GOLDFINCH MULE (Jouque).—1 and 2, H. Ashton. *he*, W. Walter.

GOLDFINCH MULE (Mealy).—1 and 2, H. Ashton. *he* and *c*, W. Walter.

ANY OTHER VARIETY.—1 and *he*, R. Bills. 2, H. Vine. *he*, G. Easton, Landport.

RABBITS.—Length of Ear.—1, F. Brown, Gosport. 2, G. Baynton, Southsea. *he*, T. Stimson. Portsmouth. For all Properties.—1 and 2, H. Simmonds, Chilcombe Rectory; *he*, T. Stimson; E. J. Bennett, Chilwalk; H. Simmonds. Any other Variety.—1, O. Nicholson. *he*, J. Howard, Fareham.

JUDGES.—Poultry, Pigeons, and Rabbits: E. Hewitt, Esq., Sparkbrook, Birmingham. Cage Birds: A. Willmore, Esq., London.

NANTWICH POULTRY SHOW.

THIS year's Show has proved a very great success, the weather being fortunately fine, and the attendance greater than ever. Last year there was no meeting at Nantwich, as there was not any building sufficiently capacious to hold so large a collection as was anticipated, except the Town Hall, which was deemed so insecure as to have since been taken down and rebuilt in a far better and more commodious style. The show of this year has been better than any former show at Nantwich; and the Spanish, Hamburgs, Game, and Water fowls would have been a great credit even to the largest exhibition. The diligence of the Committee to ensure both the welfare of the poultry and visitors, merits our highest praise.

SPANISH.—1 and Cup for best pen of poultry in Exhibition, W. Wooley, Bunnbury. *he*, J. Heath, Nantwich. *Chickens*.—1, W. Wooley. 2, R. Hulme, Winsford. *he*, W. Wooley; J. Dean, Wharton.

GAME BANTAMS.—1 and 3, W. Griffiths, Nantwich. 2, R. Ashley, Nantwich. *he*, T. Burgess. *c*, E. S. Belyse, Oakfield; G. F. Ward, Wrenbury.

BANTAMS (Any other variety).—1, E. S. Belyse (Sabraights). *he*, Master J. Gentry, Nantwich.

DORKINGS.—Prize, V. K. Deardon. Prize, T. Burgess (Grey).

COCHINS (Cinnamon and Buff).—Prize, J. Dutton, Bunnbury.

COCHINS (White).—Prize, J. Dutton.

COCHINS (Buff).—*Chickens*.—Mrs. Sugden's Cup, H. Mapplebeck, Woodfield, Birmingham.

BRAMA POOTRAS.—1 and *c*, J. Heath. 2, W. B. Etches. *c*, W. Johnson, Nantwich.

HAMBURGS (Pencilled).—Prize, Mrs. Flynn, Hardingswood.

HAMBURGS (Spangled).—1, Mrs. Flynn. 2, T. Burgess. *c*, J. Talbot, Miss F. Merrill, Beam Bridge.

POLANDS.—1 and *c*, J. Heath.

GAME (Any colour).—*Cocks*.—Cup, W. Miller, Wybunbury. 2, J. Wilkinson, Nurbury. *he*, R. Ashley; T. Whittingham; G. F. Ward. *c*, T. Burgess. *Cockerels*.—Cup, W. Ruscoe, Rease Heath. 2, R. Ashley, 3, S. Tapley, Andlem. *c*, J. Pedley, Nantwich. *Hens*.—1, E. S. Belyse, 2, T. Burgess. 3, T. Whittingham. *he*, T. Hassall, Adderley. *c*, S. Tapley, Andlem; R. Ashley.

GAME (Brown Reds).—1, T. Whittingham. *he*, C. Grimes, Middlewich. *Chickens*.—Cup, G. Hollowood. 1, J. Heath, Ravensmoor. 2, J. Cappur, Burland. 3, T. Burgess. *he*, W. Sewerhuts. *c*, G. Hollowood.

GAME (Black Reds).—1, T. Whittingham. 2, R. Ashley, and J. Heath. *c*, C. H. Hornby. *Chickens*.—1, C. H. Hornby. 2, H. Chesworth, jun., Burland.

GAME (Any other than Black or Brown Reds).—1, R. Ashley, Nantwich. 2, C. Grimes, Middlewich. 3, J. Wilkinson, Nurbury.

SWEEPSTAKE FOR BANTAMS.—1, G. F. Ward (Black Red). *he*, W. Griffiths (Duckwing).

SWEEPSTAKE FOR BRAHMA COCK.—1, J. Heath. 2, W. B. Etches. *c*, W. Johnson.

SWEEPSTAKE.—Prize, W. Sewerhuts, Nantwich.

TURKEYS.—1, T. Whittingham, Batherton. *he* and *c*, W. H. Hornby.

GEES.—1, Master W. Bowers, Broad Lane. *he*, T. Burgess, Burleydam. *Ducks* (Aylesbury).—1 and *he*, M. Hornby, Davenhall.

DUCKS (Rouen).—1, T. Burgess, Burleydam. *he*, J. Dean.

DUCKS (Any other variety).—1 and 2, G. Barbour, Tattenhall (Carolina and White Peruvian Musk). *he*, G. Barbour; W. H. Hornby, Poole Hall (Call).

SELLING CLASS.—1, J. Heath (Game). 2, W. B. Etches (Brahmas).

PIGEONS.

CARRIERS.—1, H. Prince, Nantwich. 2, W. Wooley, Bunnbury. *he*, E. J. Butterworth.

DRAGONS.—1, H. Prince. 2, A. Boote, Weston. *he*, W. Cliff; E. J. Butterworth.

BARBS.—1, H. Prince. 2, J. Dutton, Bunnbury.

FANTAILS.—1 and 2, J. Chesters. *he* and *he*, J. Dutton.

POUTERS.—1, J. Chesters. 2, W. Wooley. *he*, J. Chesters; A. Boote.

NUNS.—1, J. Chesters. *he*, J. Dutton.

JACOBS.—1, J. Chesters. 2, J. Dutton.

TRUMPETERS.—1 and 2, J. Dutton. *hc*, J. Chesters.
 TURNITS.—1, J. Dutton. 2 and 3, J. Chesters.
 TUMBLERS (Almond).—1, J. S. Skidmore, Nantwich.
 TUMBLERS.—1, J. Chesters. 2, J. Grice. *hc*, H. Prince. *c*, J. Chesters;
 J. Grice.
 OWLS.—1 and 2, J. Chesters. *vhc*, H. Prince.
 DOVES.—1, J. S. Skidmore.
 ANY OTHER VARIETY.—1, J. S. Skidmore (Spots). 2, J. Dutton (Labore).
 SELLING CLASS.—1, J. Chesters (Yellow Turbils).

SONG BIRDS.

CANARIES (Yellow).—1, S. Williamson. 2, H. Sumner, Nantwich.
 CANARIES (Buff).—1, H. Green. 2, H. Sumner, Nantwich.
 CANARIES (Any variety).—1 and 2, J. Banks, Crewe (Silver-spangled
 Lizard and Buff-crested). *vhc*, R. Green.
 LINNETS (Brown).—1, S. Williamson, Nantwich. 2, J. Bullock, Nant-
 wich.
 GOLDFINCHES.—1 and 2, S. Williamson.
 SKYLARKS.—1 and 2, S. Williamson.
 BULLFINCHES.—1 and 2, S. Williamson.

RABBITS.—Long Ears.—1, J. Robinson, Nantwich. 2, Master P. P. John-
 son, Nantwich. *Weight*.—1, T. Knight, Nantwich. 2, G. Smith, Marsfield.

Mr. Hewitt, of Birmingham, judged the Poultry; and Mr. Redpath,
 of Manchester, the Pigeons and Song Birds.

CREWE POULTRY SHOW.

THE following is a corrected list of the Pigeon awards made at
 this Show, and which reached us too late for publication with the
 rest of the prize list last week:—

TOMBLERS (Almond).—1 and 2, J. Fielding, jun., Rochdale. *hc*, A. Boote;
 H. Yardley, Birmingham. *c*, H. Brown.
 TUMBLERS (Any other variety).—1, K. Minnitt, jun. 2, J. Fielding, jun.
hc, F. Graham (Mottled and Blue Beards); H. Prince (Agates); J. W. Edge,
 Birmingham. *c*, J. F. Leach.
 CARRIERS.—1, G. Wooley. 2, E. Walker. *hc*, F. Graham; G. C. Holt.
 POUTERS.—1, H. Brown. 2, W. Gamon. *vhc*, H. Yardley; J. F. Leach.
 BALDS.—1 and 2, J. W. Edge. *hc*, J. Fielding, jun. *c*, H. Hughes; W.
 Banks; J. Goodling.
 JACOBINS.—1 and 2, J. W. Edge. *vhc*, A. Boote; J. Hawley, Bingley; J.
 F. Leach.
 FANTAILS.—1 and *vhc*, H. Yardley. 2, J. Hawley.
 TRUMPETERS.—1, J. Hawley. 2, J. Firth, jun., Dewsbury; *hc*, J. Dutton;
 W. Gamon, Chester. *c*, T. Robson.
 OWLS.—1 and 2, J. Fielding, jun. *hc*, T. Newell; F. Graham. *c*, F.
 Graham.
 NUNS.—1 and 2, W. Croft. *vhc*, E. T. Dew. *hc*, F. Graham; J. Dutton.
c, T. Newell. P. C. Beadley; G. F. Whitehouse.
 TURBITS.—1, J. Fielding, jun. 2, T. Robson. *vhc*, F. Sale; J. W. Edge.
hc, W. Banks; R. Siddall.
 BANDS.—1, F. Firth, jun. 2, J. Fielding, jun. *vhc*, F. Firth, jun.; H.
 Yardley. *hc*, H. Yardley; H. Prince; F. J. Leach. *c*, J. Fielding, jun.
 DRAGONS.—1, W. Cliff. 2, J. W. Edge. *hc*, G. C. Holt; H. Yardley.
 MAOPIES.—1, J. F. Leach. 2, C. Baker. *hc*, J. W. Edge. *c*, T. C.
 Marshall; T. H. Frean.
 ANTWERPS.—1, R. Autherson, Hazel Grove, Stockport. 2, H. Yardley.
 The whole class Highly Commended.
 ANY OTHER VARIETY.—1, T. Newell (German Toys). 2, H. Yardley.

CANKER IN PIGEONS.

I NOTICE in your Numbers 402 and 409, remarks respecting
 the canker disease in Pigeons. Should it be the same as we ob-
 serve here (Brussels) in the Antwerp breed, I think your corre-
 spondents will prevent it if they take care to provide themselves
 with a reasonable quantity of old seeds. Change of diet, princi-
 pally at moulting time, and amongst young birds, brings
 forth the canker, as very often the seeds are not sufficiently old.
 Many fanciers, and I do the same, feed their birds with Indian
 corn, from September till March, when we are obliged to alter
 their regimen in training them for the flying matches, other-
 wise maize is one of the best seeds for Pigeons.

I formerly cured my birds by applying caustic, but find that
 if they are left alone, the canker, after growing to a certain size,
 becomes dry, and ultimately falls off. The birds become thin,
 as they can scarcely pick up and swallow their food, but will
 soon recover.—BRUSSELS FANCIER.

EGGS.

"I no wonder, Clara, you allow Harry to play with and to
 nurse that little Bantam. Are you not afraid it will leave
 something in the shape of hoppers with him?" said Mrs.
 Walter to her sister.

"No," replied Farmer Thompson's wife; "our poultry are
 quite clean, at least we think them so. They certainly have
 every inducement, and every contrivance we can think of, to
 make them comfortable and to keep them in good health, and
 as a rule fowls take every advantage you offer them."

"I cannot bear to see my children handle fowls, or, indeed,
 birds of any kind. I am always thinking of——"

"Ignorance would be bliss to you, then, Mary. I wonder

you do not see ticks when you pull on their woollen socks.
 What a world of pleasure you deny yourself, to be sure. Of
 course you never eat eggs?"

"Indeed I do."

"You would not have many if you had your own poultry to
 manage."

"None."

"Ah! I often say that whatever our English soil may be,
 English people are not suited by nature for poultry-keeping.
 The importation of eggs may well increase at a frightful rate;
 so much good money going out of the country, and very poor
 efforts made to lessen it. Our neighbours across the Channel
 far exceed us, and there is no reason why they should. We
 might easily produce thousands of eggs at little or no cost,
 often, indeed, at a saving in our yearly expenditure—yes, even
 in towns you might do this. But then your town houses are so
 neat and tidy, with their little back courts, which you would
 like to call gardens if anything would grow in them; and you
 are so dainty, or so afraid of a little trouble, that you shudder
 at the thought of keeping half a dozen hens to eat up the left
 potatoes and overbaked crusts of bread which will accumulate
 in the most careful household and under the most watchful
 supervision. I often speculate as to what people do with these,
 for dogs will seldom eat such scraps."

"I can tell you, Clara; they are all put into a tub kept for
 the purpose, and sold once or twice a-week for pigs."

"That tub would be a nuisance I could not put up with.
 I should always be fancying more than I bargained for found
 its way in."

"Then they would have to be thrown out and wasted; fowls
 in a town are a great bother, which you, living out in the
 country, know nothing of—sure to be an annoyance to one's
 neighbour or to one's self."

"Well, if you are so afraid of annoyance, which is often more
 imaginary than real, you must give the high price you usually
 have to pay for new-laid eggs in the winter, when so few can be
 procured."

"But then, Clara, so very few are wanted. All housekeepers
 put down, either in salt or lime water during the spring months
 for winter use; and it is only for a few weeks at the close
 of the year that eggs can be called dear in our northern towns.
 I usually pay 2d. or 1½d. each during November, December,
 and the early part of January, after that they lower in price
 unless the season is very severe. I make it a rule, never to
 give more than 1s. for six, and there are thousands of well-to-
 do people who think it very extravagant to give more than 1s.
 for twelve eggs."

"They are fortunate not to be compelled to purchase eggs at
 a much higher rate. My own opinion is they ought never, not
 even in the season of plenty, to be sold for less than 1s. for
 fourteen. Then, too, in justice to producer and buyer, eggs
 ought to be bought and sold by weight. Eight ordinary-sized
 eggs, or six Black Spanish, will weigh 1 lb. We buy many
 things not half so good at a much higher rate. Wait, Mary,
 until you have a long lanky boy with a poor appetite, or a
 husband who cannot eat meat to his breakfast, then you will be
 glad to have them at three for 1s. The worst of the matter
 to me is, there is always a doubt about the newness of bought
 eggs. I always break into one with fear and trembling, and can
 seldom eat it; but then, I do not care for an egg that begins to
 count its age by days instead of hours."

"Its keeping properties are only indifferent then," replied
 her sister. "We townspeople are not so dainty; we call an
 egg good that is not bad."

"Yes, but if you had ever had the pleasure of eating your
 own you would not. I know nothing that is sooner spoiled;
 through its porous shell it quickly imbibes the taint of new-
 mown hay, fish, cheese, onions, or any other article it may be
 placed near. We cannot expect vendors to care for these little
 matters, and considering the low rate at which eggs are sold is
 it possible?"

"Low, do you call it, Clara? Why, a few years back I could
 get twenty-four for 1s., sometimes even more."

"You will never do that again, Mary, in England, unless you
 live until all the coal is burned out, and the New Zealanders
 stands, as they say he will do some day, in amazement on London
 Bridge, watching the ploughshare go over the once-paved streets.
 It is contrary to all reason that the price should be lower.
 There are more consumers than producers of eggs, and the cost
 to producers is much heavier both in food and the payment of
 labour than it was formerly. And then, many who used to
 produce for the market retain most of them for home consump-

tion—myself to wit. Why should I sell my eggs, good animal food, losing little or nothing in the process of cooking, at 5d. or 6d. a-lb., and then purchase mutton at 8d. or 9d., or bacon at 10d. or 11d., or even higher, both these losing much weight in preparation? As soon as the collector offers only 7s. a-hundred, a mode of purchase which is a relic of barbarism, I close with him for the season; it is only in the flush of spring that I care to part with any eggs. I assure you, most farmers' wives with any really economic rule of management do the same."

"And yet you tell me, Clara, that hundreds might be produced in our own country at little expense—even at a saving."

"So they might, but not by one person in one place as an article of trade; but by many individuals at their own houses, town or country. There are few households of six persons, where the scraps, such as parings, outside leaves of vegetables, loaf-ends, and sundry bits would not in quantity maintain three fowls; add other three, invest as much money as your monthly egg bill in meal and corn; and if your fowls have been well chosen, and are well managed too, you will soon find yourself in possession of more eggs, valuing them at a market rate, than the cost of your outlay. But if your six fowls do well, do not dream of doubling the number, thinking to double the number of eggs. You will only meet with disappointment. Birds require a wide breathing space, they may not be packed closely like cottage houses in a town—not with impunity at least."

"Supposing I were to make the venture, how many eggs would these six hens, or rather let us say five, for I do not believe in birds going unmated, give me per week or month?"

"I should say fifty or sixty the month, which is a low average. Some birds would lay many more, but you might chance to have one preferring eating to working; and wonderful numbers do not often occur. I had a Cochins which commenced laying one Christmas-day, and by the beginning of May she had laid ninety-six eggs, after that she never laid again—her life's work was over. I kept her many months, thinking she would be ashamed of all play and no work, and parted with her in the end."

"I wish they were not such a trouble, I would really try the experiment, if it were only to ease my conscience; for I often feel uneasy at the good bread and milk, and pudding the children will not eat up."

"Good egg-producing matter you keep as a nuisance, and I daresay part with for a few coppers."

"Nay, sometimes I give something to have it removed. We have ample convenience; but then there is the feeding of them."

"Nothing terrible in that when you once begin. Give them their breakfast of corn, and see that cook mixes up her scraps with meal in a wooden bowl. If you are not afraid of them, others will not be long, and you will soon find great pleasure in the occupation; and I should not wonder if some day I did not see you handle your pets as little Harry does his Bantam."

"I could never do that, Clara."

"I would rather fondle a bird than a dog; you are fond of the latter, Mary."

"You always loved fowls, even when you were a girl."

"Yes, ever since I invested my first guinea—threw it away you all considered—in Silver Hamburgs. I love them still, I would not be without poultry if my eggs cost more than bought ones. I shall ever speak a good word for the poor birds, often badly housed and ill-fed, for anything is considered by some good enough food for poultry—potatoes too bad for pigs, corn with all the meal, if it ever had any, dried out of it; and on this generous diet they are expected to work all the year round. Yet take care you do not overfeed your birds, for of all absurdities it is the most absurd. A fat fowl is of little good—healthy and strong they should be for their own pleasure, and your profit. And there are in the winter few more beautiful sights than that of a lot of well-fed, well-cared-for fowls, with their bright silky coats and rosy combs, straying over a green meadow, and giving a feeling of life and cheerfulness where all would be still and dead; and in our country homes, I assure you, Mary, we make the most we can of every out-door interest this dull December weather."—MAUD.

NOTES ON GOLDFINCH MULES AND MULE-BREEDING.—No. 2.

THE Goldfinch, which is held in considerable favour in all parts of England, and in Scotland likewise, is deserving of much notice, and is fully entitled to the word proud being applied to it. In Derbyshire, Leicestershire, Staffordshire, and, no doubt, other counties, the Goldfinch is termed a "proud

taylor," but generally, during my annual visit to the Staffordshire Potteries, there it is styled the "red Linnet," the breeders and fanciers in that locality thinking much of their Goldfinches, and the brown Linnets, and often matching and selling them for considerable sums.

Bechstein says, that to breed Mules it is necessary that the Goldfinch be reared from the nest. This is entirely unnecessary, for Mules can be bred from Finches, whether reared from the nest or not. Some, who evidently know more of the theory than the practice of Mule-breeding, assert that it is of no use trying to breed Mules unless you do so with a "cheverel" Finch. This is a mere random statement.

The Goldfinch is an especial favourite of mine, and I have closely observed its habits. One of the best breeding Goldfinches I have had was a small bird, with a not very fiery face, sent to me by a Plymouth friend. This bird accidentally lost one eye, but it did not prevent its breeding, for I paired it with a mealy-crested hen, almost a white one, and had very great success. I bred many exceedingly handsome Mules; one in particular, after winning a first prize, found a home at Calke Abbey, in Derbyshire, the seat of Sir J. H. Crewe, Bart. The mother of this Mule never bred a nest of Mules without most of the young being light or well marked; yet, singularly enough, after losing my one-eyed Goldfinch, I sold the hen to Major Howarth Ashton, and he having paired another Goldfinch with her, and bred Mules, the young stock, to quote his expression, were "as dark as mice." Here is an instance worth noticing, of the difference between one Goldfinch and another. It is, and has always been, quite evident to me, that Goldfinches often "hit it" (so to use the term) better with some hens than others. I have known many instances of this occurring, but, of course, by having a good strain of hen Canary there is more likelihood of light or pied Mules being bred.

There is much difference in Goldfinches, for they vary in colour, plumage, appearance, and size, and in habits also. The Goldfinch I am fond of for breeding with, is one that builds at the top of high trees, the pear tree for instance. In this and other localities there is a kind termed the "pear-tree" Finch. The Rev. F. O. Morris, in his "British Birds," says "that the Goldfinch builds in orchards and other trees;" and Yarrell, in "British Birds," says "the Goldfinch builds a very neat nest, which is sometimes fixed in an apple tree, or pear tree." This is the kind of Goldfinch to which I allude, and I have for several years visited an orchard near Derby, had a nest taken from the highest branch of a pear tree, and myself, or with the assistance of my wife, who is equally fond of birds, reared the young by hand, feeding them with the yolk of egg and bread, mixed into a pulp. These Goldfinches have become reconciled or tame, or at least they never exhibited the wildness and fluttering habits of other Finches when reared. They have been so tame, that upon placing my face to the cage side they would pull at my whiskers, or feed from my mouth. Such Goldfinches, or those termed "cheverel" or "chibald," I believe are more sought after by many for breeding with, but as they are not to be had at any period, as I remarked in my previous paper, it is immaterial whether the bird be a "cheverel" or not. Others will breed, so do not be deterred from Mule-breeding.

Mule-breeding requires much attention and patience, and even when young Mules are bred many a breeder or fancier is disappointed with the appearance of the young stock season after season. I know many who have tried some years, and have only been rewarded with dark Mules, although the hens have been of a good strain. To breed them good is a great difficulty, but still there are some I know who have had good fortune with them, but they are unwilling to part with the hens, except at remunerative prices. When good Mules are obtained, their value is great; for instance, a clear bird which it often requires years to obtain, or one well and evenly pencilled about the eyes, with a pair of faultless marked wings, bearing a rich yellow throughout the bars, with a striking bronze-like colour on the face. These points in a fine specimen, added to close bloomy feather, and prime condition, accompanied with size and form, and a pair of bright eyes peering through a clean snake-looking head, often cause me to think there is a something more aristocratic and superior in Mules than many other birds. On really first-rate specimens the attention becomes rivetted, and the more you look at them the more you like them. There is, also, one advantage in having a good Mule or two, for, unlike a Norwich, London Fancy, or Lizard, they do not deteriorate in appearance after passing through the moult. The prices, too, which they realise

are considerable, for a pair of them last year I know were sold for £20, and it is not an uncommon occurrence to sell them for large sums.—G. J. BARNES, *Derby*.

(To be continued.)

FOUL BROOD.

I RECKET to see that my friend, Mr. Lowe, in a well-written and otherwise unobjectionable paper on foul brood, refers to the controversy which five years ago raged between us on the subject of this disease in such a manner as compels me, in spite of my reluctance to stir up the ashes of an old dispute, briefly to re-state the points then at issue between us, as well as the manner in which the discussion began and ended.

Towards the end of July and in the early part of August, 1863, three articles from my pen descriptive of the ravages of foul brood in my apiary, together with the means by which I at first vainly attempted its cure, and the mode by which I ultimately succeeded in eradicating it, appeared in the pages of "our Journal." These were promptly met by counter-statements from Mr. Lowe, in which he actually ignored my evidence of what had occurred in my own apiary, would pay no heed to my declaration that I had introduced the disease by the unwitting use of infested combs taken from a common straw hive, but insisted upon it that I had in point of fact created what I wrongly designated a disease, and had brought the evil upon myself by meddling and ill-judged manipulations—whilst at the same time he held my modes of management, the fancied disease which he said they had produced, and the means by which I professed to have cured it, as being all equally illusory and delusive, and worthy only of derision and contempt.

In support of these views he asserted:—

First, That chilled brood is not removed by bees, but that wherever it occurs there it must remain, and that unless removed by the apiarian, it must inevitably become what I had termed foul brood.

Second, That foul brood is not a disease, is neither infectious nor contagious, and can be at once radically cured by simply excising those parts of the combs which contain decayed and abortive brood.

Third, That it is only in the hands of the experimentalist that foul brood becomes general.

These views were upheld by Mr. Lowe with much ability and tenacity against myself and most of the leading apiarian contributors to "our Journal" for more than six months, until he was relented on every point by such irrefragable evidence, that it at last became too strong even for him, and finally in the number for the 22nd March, 1864, he announced that he was not in a position to add anything material to what he had said upon the subject, and admitted that the testimony of his adversaries was calculated to produce a strong impression and to stimulate inquiry and investigation.

It is with the utmost reluctance that I have entered upon these particulars; but it must be remembered that it is now nearly five years since the controversy closed, and that a new generation of readers has sprung up in the meantime, to whom the facts of the case are necessarily unknown, whilst they are by no means fresh in the recollection of old ones. All these, therefore, who have perused Mr. Lowe's recent article would probably receive the erroneous impression that he, when advocating the truth in respect of foul brood, had been overborne by popular clamour, and that, outnumbered but in no respect refuted, he could still under his unmerited defeat fairly console himself with the maxim, "*Magna est veritas, et prevalebit*."

After very carefully perusing and reperusing Mr. Lowe's last paper, I confess to being unable to comprehend exactly what are his present views on the subject of foul brood. If he conceives that he advocated only the truth in 1863 and 1864, then he must believe that what he at that time advanced as true is equally true now, and in that case I shall at once decline to reopen the controversy. If, on the other hand, he is disposed carefully to investigate the subject of the origin of foul brood, and seek earnestly for the truth wherever it may be found, he has my warmest wishes for his success, and is welcome to my best assistance in attaining it.

First, then, with regard to his idea that "*virulent* foul brood seems, comparatively speaking, a malady of recent years." I may remark that the Abbé della Rocca describes an epidemical disease which from 1777 to 1780, attacked the hives in the island of Syros, in the Archipelago, and was very near an-

nihilating all the bees. This disease he attributed entirely to infected combs, or to the brood being placed in the cells in an inverted manner. Aristotle also, after giving a perfectly accurate description of the ravages of the wax moth, speaks of a disease which produces a certain kind of laziness among the bees, and is attended by a disgusting smell of the hives. As these symptoms are not manifested until the malady has nearly run its course and approaches a fatal termination, it appears that virulent foul brood was common more than two thousand years ago!

Any one who can refer to the number of "our Journal," issued on the 17th November, 1863, may see that I therein stated that an instance had been brought under my notice by a valued correspondent in the North, which countenanced the suspicion that an overwhelming quantity of chilled brood might, under exceptional circumstances, degenerate into actual foul brood, just as an ordinary cold in the human subject may occasionally, although rarely, be developed into malignant fever. This, then, is the course which I think inquiry should take: Does chilled brood from a perfectly healthy stock ever degenerate into foul brood, and if so, under what conditions and circumstances? I myself believe that if the brood of a hive which is labouring under what I may term the chronic form of foul brood be chilled, the disease is likely to assume increased intensity, and may pass at once into the active and virulent stage, and this I fancy was the case in the instance related by the Baron von Berlepsch; but I have myself never yet met with a case in which chilled brood, if perfectly healthy, has passed into that stage of infectious decomposition which we now call foul brood. In support of this statement, I will briefly refer to two additional instances which have come under my own direct observation since the conclusion of the foul-brood controversy.

The first came under my notice during the summer of 1865, and was referred to by me in the number of "our Journal" issued on the 20th of June in that year. An apiarian friend added brood too rapidly to a nucleus or small artificial swarm, the consequence was, that much of it became chilled, and when I saw it appeared in various stages of decomposition. At my especial request my friend kindly consented to permit matters to remain as they were, with the view of ascertaining whether foul brood would or would not be the result. I found afterwards that all the chilled brood was ultimately removed by the bees, and that no permanent ill effects followed.

The second case occurred in my own apiary. On the 12th of June, 1866, I sent a stock of Ligurians to Mr. Pettitt, of Dover, the combs of which fell during their transit by railway. Although I begged him to return the bees at once, I did not get them back until *eleven days afterwards*, when they were accompanied by their brood combs packed in a separate box! Of course, all were hopelessly and irremediably chilled; but worker combs were at that time too scarce with me to be lightly thrown aside, so I forthwith hitched them up to bars, and put them into a couple of my strongest stocks, the bees of which speedily repaired and cleared out the cells, and they were forthwith bred in without any evil result whatever.

Of over-heating I have met with but one instance, which happened so long ago as July, 1859, when I was weak enough to exhibit a couple of observatory hives at one of our local flower shows. The committee insisted on the bees being confined, which resulted in serious injury to one stock, and the entire destruction of the other, through the softening and falling of the combs, which became literally scalding hot. Putting these fallen combs into another stock, I had the mortification of finding all the young bees turned out of the hive as fast as they were hatched, owing to their wings being shrivelled up by the excessive heat to which they had been exposed. Still this was the extent of the injury, and no symptoms of foul brood appeared.

These, then, being the results of my own experience with both chilled and over-heated brood when previously in a perfectly healthy condition, I may, perhaps, be excused for asking for more convincing evidence than has yet been laid before me, before I can hold it as proved that either of these causes is sufficient to develop that fearful malady which we denominate foul brood, except in cases where infection has previously existed.—A DEVONSHIRE BEE-KEEPER.

In order to assist those who are willing to investigate scientifically the nature of foul brood, I here submit for their guidance the following particulars which may materially assist them:—First, I may mention that when I recommended baking in an

oven, I did so thinking that more people would have ovens than stoves. Also I beg to say that whatever heat Dr. Preuss recommends, I consider it sufficient to expose the hives and combs for some days to a dry heat of from 100° to 120°; at least I think, although I am not positive, that the heat I used did not exceed this. I may, however, be in error respecting the actual cause of cure, as there were other agents present capable of destroying life—viz., the fumes of sulphur and charcoal. The hives being placed right above the stove were in such a position as to catch both, and it is possible that these might have something to do with the destruction of the fungi, although I am inclined to believe that the penetrating dry heat, carrying off every particle of moisture that remained in the hive, was the real cure. I have merely thrown out these hints for those who may think fit to try the experiment, as I believe that from the means I now use to prevent foul brood, I shall never again have the chance of beholding it amongst my own bees. I shall be glad if those who doubt the correctness of my theory and the efficacy of my mode of treatment will explain why this disease should have vanished from the apiary of—A LANARKSHIRE BEE-KEEPER.

HONEY HARVEST IN ESSEX—HIVES.

On referring to my note-book, I find that in this part of the country, North Essex, the past season has been on the whole a good one, both as regards swarms and honey. I commenced the year with twelve stocks, and on my return from the Continent in May capped my straw hives and supered the boxes. Swarming commenced on May 18th, followed by swarms on the 26th, 27th, 28th, 29th, 31st; June 9th, 10th, and 11th. Some of the latter swarms I took off.

On the 30th of May I took off a super from a Stewarston hive, 18½ lbs. of beautiful virgin honey; on June 15th, a cap of 8½ lbs.; June 30th, 11½ lbs.; June, 30th, 8½ lbs.; July 6th, 13½ lbs. (box); July 13th, 6 lbs. With one exception all these were small straw caps. I have not destroyed any bees, but have left all my stocks well supplied with an abundant store for the winter, no doubt in many cases beyond what the tenants require, but in this I shall reap the benefit by earlier swarms in the spring.

I quite coincide with "A RENFREWSHIRE BEE-KEEPER" in his encomiums on the Stewarston hive, though I have not yet attained the "judicious management" of preventing swarming; yet there can be no question about the Stewarston being a good hive, and however picturesque and pastoral straw hives may be, like thatched cottages they must in time give way to improved modern appliances.

In the Stewarston hive there is one drawback which I am trying to obviate, that is the difficulty of drawing the slides as they are now made. So soon as you admit the bees into their chamber, they make all chinks as tight as possible with wax, and it is extremely difficult to draw the slides. I am having some boxes made with double tops, so that the slides may run between, and thus prevent the bees waxing up the grooves. The Woodbury rib I have not tried, and am doubtful whether there is any gain in struggling to make one's bees work straight combs. So long as they fill the box with good honey, it matters little how the comb is built. Bees delight in varying the build of their combs, and stoutly contest being forced to make them of one uniform pattern.—B. B.

[Straight combs are essential in all kinds of moveable comb hives, and it is a mistake to suppose that they are in any way obnoxious to the bees.]

EARLY POLLEN-GATHERING.—On Friday last (February 5th), I noticed the bees very busy carrying pollen into three of my hives. I consider this very early for this locality, being nearly a fortnight sooner than I have ever seen it before.—JOHN GALE, Mount Pleasant, Alton, Hants.

OUR LETTER BOX.

HEWITT TESTIMONIAL (P.).—We very much regret to find from your letter, that although it is nine months since the presentation of the above, one person who was entrusted with moneys has not yet remitted them to the proper quarter. If this is not done at once, and you will communicate his name, we shall certainly feel it our duty to publish the name and particulars.

BRAHMA FOOTRAS (H. W.).—Six Brahmas will do in a very small space, and will do well as regards laying. Large space is only required for breeding, rearing chickens, and so on. If you cannot give more space you may keep them in a place 10 feet long by 8 wide. If you have not so much room they will do in less. It must always be borne in mind that

the condition of keeping birds in health in a very small place is that you shall, as nearly as may be, provide them with that which they would find if they were at liberty. They must have grass, grit and lime, old ceilings, &c. If they can have lettuce, so much the better. Their eggs must be collected soon after they are laid, or they will peck them.

RABBITS (Idem).—You may keep as many does as you like if you allow two nests for each doe; but you will breed as many again if you keep them separate. "The Rabbit Book" is published at our office, and you can have it by post if you enclose seven postage stamps with your address.

ERECT FEATHERS (H. T. F.).—We imagine the hens peck each other; they are in the habit of doing so. It is very difficult to cure them of the habit, which is very disfiguring. We find a good supply of green food, especially lettuce, the best treatment, coupled with the avoidance of stimulants. One hen is generally the chief offender, and when detected she should be removed.

BROODINESS IN WINTER (Broody Hen).—Almost any of the sitting breeds will become broody in October and November if they are early pullets. A well-managed yard should be arranged by its owner now for the rest of the year. Dorkings hatched in March, and Cochins hatched in May, lay in the winter, and are broody in December and January. If you want to sit hens earlier than that, keep earlier pullets; but recollect you must now make your arrangements for next winter. Unless you do, it will be useless writing to ask "Mr. Editor" what you should do to get "broody hens." It is only while they are pullets that any calculation can be arrived at as to laying or sitting. When they have become hens, they adhere to fixed seasons.

GOLDEN-SPANGLED HAMBURGS (G. Limmer).—You may keep any fowls without a grass run, if you will supply them with what they would get if they had one. They must be supplied with road grit, with waste lime and mortar, and with large sods of growing grass cut with plenty of mould. Some kitchen scraps given occasionally are a great help.

EGGS ILL-FLAVOURED (T. R.).—The taste of the eggs is caused by something that is eaten by the pullets. You can try an experiment. Take the offender, give her castor oil for a day or two, feed her by hand, and when she lays taste her eggs. Try another, if you have a weakness for eggs *à la Provençale*; feed a hen on garlic for a week, and you will be delighted with the result. Any flavour may be communicated through food.

DESIRABLE FOWLS (Fido).—We recommend you to keep coloured Dorkings.

SILVER-PENCILLED HAMBURGH DISORDERED (A. M. L.).—It arises from severe cold, which, neglected, will become roup. Give Bailey's pills, feed on bread and ale, and give a pill of camphor the size of a pea every day. A week's dry weather will often cure these complaints.

AGE OF RABBITS (Olmundaroo).—There are no certain signs whereby to determine age after they have become adults, until they are very old, when the teeth show it.

BARBS AND OWLS (An Old Journalist).—Your Barbs are not necessarily cross-bred because they have turned crows, as Barbs with this peculiarity existed above a hundred years ago. They are also quite right in having long tails and flights. We object to Barbs being Tumbler-shaped. We scarcely think, however, that the parents of your birds took any prizes except at small shows, or where there happened to be no smooth-headed birds for competition, as the best birds shown are smooth-headed, and judges invariably give the prizes to them. Crows-coloured eyes are not so much liked as pea-coloured. We think you will not gain a prize with your birds unless you breed them extraordinarily good in every other property so that the judges would be led to overlook the turn crown. In regard to your black Owls having white tails and turn crowns, they are most probably imported birds, or bred from such. In this breed also, the smooth head is preferred. The black Owls with white tails and turn crowns may be considered a pretty variety, but we fear you would gain no prizes with them; but you need not consider them as cross-bred if other properties be good.

ALMOND AND SADDLE-BACK FANTAILS (St. Edmunds).—That it is possible to breed Almond Fantails appears from the fact, that in the rare and valuable "Treatise on Domestic Pigeons," published in 1765, the author states under the article headed "The Broad-tailed Shaker," "I have seen an Almond of this sort, which was purchased by a certain nobleman." To attain your object we would recommend the following plan:—Pair a yellow hen with a black cock, their offspring again with yellows, until you reduce the black to less in colour than the yellow. At the same time pair a yellow hen with a white, and their offspring to yellow again, until you get most yellow and only a splashed tail and flight. After a few generations cross those bred from yellow and black with those bred from yellow and white, and you might obtain Almonds. By all means let us know the result of your experiment. Saddleback Fantails are white with dark colour on the shoulders like Turbits. Mr Huio, of Roman Cottage, Crossbill, Glasgow, has some fine specimens of this variety.

POLISH FOWLS (Idem).—We fear all your Polish fowls are pullets, by what you mention.

MOVING A HIVE (Edwin Walford).—We should move the hive from a lower to a higher shelf when the bees are in full work, moving them little by little until the hive attains the desired elevation.

TRANSFERRING BEES FROM STRAW HIVES (T. B. H.).—If your wooden hives are furnished with frames your stocks may be transferred to them about May, or as soon as they become populous, in the manner described in page 319 of our twelfth volume. If, on the other hand, they are destitute of these conveniences, we should advise you stocking them with swarms from your straw hives. Write to T. Woodbury, Esq., Mount Radford, Exeter, for information respecting Ligurian queens.

POULTRY MARKET.—FEBRUARY 10.

THE time of year is telling upon the market. The supply is becoming smaller, and the quality is influenced by the mild weather. There is not, however, the ghost of a trade,

	s.	d.		s.	d.
Large Fowls.....	3	6 to 3	6	Pheasants	0 0 to 0 0
Smaller do.	2	6	3 0	Partridges	0 0 0 0
Chickens	2	0	2 3	Hares.....	0 0 0 0
Geese	7	6	8 0	Rabbits.....	1 4 1 5
Ducks	2	6	3 0	Wild do.....	0 9 0 10
Pigeons	0	9	0 10	Grouse	0 0 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 18-24, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
18	Th	Meeting of Royal and Linnean Societies.	45.1	30.9	38.0	17	10	47	1	45	6	10	7	0	7	14	9
19	F		44.9	31.0	37.9	15	8	7	2	5	35	10	37	0	9	14	3
20	S	Royal Horticultural Society, Promenade.	45.4	30.5	37.9	20	7	7	21	5	8	11	45	1	0	13	57
21	SUN	2 SUNDAY IN LENT. (8.30 P.M.)	46.5	32.0	39.3	19	5	7	23	5	51	11	51	2	10	13	57
22	M	Meeting of Royal Geographical Society.	45.6	31.5	39.1	19	3	7	25	5	after.	53	3	11	11	13	42
23	Tu	Meet. of Inst. of Civil Engineers, 8 P.M.	47.4	31.5	39.4	14	1	7	27	6	47	1	51	1	13	13	33
24	W	Meeting of Society of Arts, 8 P.M.	46.9	32.5	39.7	20	59	6	29	5	1	3	41	5	13	13	21

From observations taken near London during the last forty-two years, the average day temperature of the week is 46.1°; and its night temperature 31.4°. The greatest heat was 58°, on the 21st, 1846; and the lowest cold 3°, on the 18th, 1855. The greatest fall of rain was 0.51 inch.

COLLECTIONS OF PLANTS.



It is by way of quaint editorial satire, or to illustrate a fact in natural history, or merely for ornament, that we sometimes and now see at the beginning of the first article in "our Journal" a peacock, long of tail and small of head, perched upon a balustrade, and gazing dreamily down upon a flower garden, while by his side stands an ornate pedestal which is made to do duty for that nearest and dearest of all the letters, that ever-recurring "I." He may be there for all these three purposes, but if for the first, the quiet wickedness and dry humour which selected him from amongst all other birds and beasts, and set him up there as a wholesome scarecrow, rivals that of the dilatory printer, who, when urged to get a vain author's first book ushered into the world, pleaded as an excuse his inability to proceed until he obtained a further supply of that same egotistical letter from his typefounder. But I rather suppose your artist must have been aware of the fact, that the ruling passion of this bird is his love of the beautiful, or rather of the showy. He will stand for hours, and look at a group of bright flower beds, or walk charmed and delighted among them. Nor could anybody blame him for his good taste if he would only be a little more careful of his tail in turning the corners. Now, few of us would feel greatly flattered in being told that we have even one trait in common with this vain bird, yet many have allowed this love of show produced by multitudes of half-a-dozen different plants to oust entirely their love of the cultivation of flowers for their own sakes, their beauty in the aggregate being a secondary consideration.

The culture of flowers may be said to be pursued in three different ways.

The modern flower gardener looks upon flowers much in the same way as the painter does upon his pigments—to him they are little more than so many whites, yellows, scarlets, purples, &c. Like convicts they have almost lost their names, and have to answer, if not to a number, at least to a colour.

The florist, again, or, more properly, the flower-fancier, worships idols of his own making. In general he cares little about showy borders, combinations or contrasts of colour, except in so far as they occur in individual flowers. His æsthetic longings are never satisfied by contemplating flowers as they came from the hand of Nature; he must improve them, and the instances in which his improvements have been most wonderful are so numerous that they entitle him to all honour and respect.

The third class of floriculturists are those whose chief pleasure is in variety, who would, if they had the means, grow everything, from a Baobab downwards; and with some slight modifications—a little less ambition and a

little more discrimination—the tenets of this class are those which I would advocate. Why should we not have far more private Botanic gardens on a small scale? It cannot be from the want of taste for them, for tastes and amusements infinitely more stupid are springing up, and thriving among us every day; and could this pure source of enjoyment not extend itself equally as well, or at the expense of some of these? Would a collection of Saxifrages, Sedums, or Violas, native and exotic, not afford more satisfaction than a similar gathering-up of postage stamps, seals, or crests, or even of old books and paintings, which have in many instances little else except old age and a sort of antique prestige to recommend them?

Not at all interfering with our show flower gardens, which are now indispensable, if, say, half an acre were devoted to this purpose, laid off with some regard to general effect; interspersed with small trees and shrubs; a shady nook here and there for woodland plants and Ferns; a small pond for aquatics; a peat mound for Heaths, Vacciniums, and the like; and all grouped more or less systematically according to their orders, and correctly named—where could a refined and educated lady or gentleman spend a more enjoyable hour? and in spring, when most flower gardens are bare and unledged, and in summer if some untoward accident, such as a hurricane or downpour "of sonorous hail or prone-descending rain," should make the glowing beds drag their colours in the mud, the more permanent and substantial character of this, our Botanic garden, could not fail to be appreciated, and even at all seasons it would prove a grand resource.

By arranging our native plants topographically, what interesting groups might also be brought together. One, for instance, and a large one it would be, might be made to consist entirely of littoral plants, such as *Armeria*, *Statice*, *Eryngium*, *Calystegia*, *Crithmum*, and hosts of others which, though mostly found near the sea, are yet perfectly cultivable inland. The alpine classes are just beginning to become really popular. The name itself is very vague, for it is not easy to say what are and are not alpine plants, but it is understood to include most of those which, being of low and compact growth, have, in the struggle for existence, been driven upwards towards the mountain tops by the more robust vegetation of the valleys, whence, no doubt, has arisen the wide-spread notion that rockeries are essential to their well-being; and rockeries have accordingly been built by the score, ten times more ugly than ever their occupants were beautiful, while the truth is that nine-tenths of them succeed better on an ordinary border.

Some may think this is all very well for botanists, but that to others an assemblage of unknown plants with long names—so very long some of them, and uncouth—cannot be very captivating; but the taste would grow if gardeners and others would try to foster it in their employers and the public, and as for the want of botanical knowledge, to begin with, a very little is all that is required. The nonsensical assertion that "A little learning is a dangerous thing," was never more at fault than when applied here. Instead of being either dangerous or at all marring our

enjoyment, a good amount of honest but constantly-diminishing ignorance is just the thing to whet our appetites, and give piquancy to our researches. I have often thought, and that not in the spirit of the fox in the fable, that it must be rather wearisome than otherwise for an accomplished botanist to pass on by moor, and field, and wood, and among all their plant-treasures to see no face he does not know, for he knows them all, and all about them: he has conquered them all during many a pleasant summer campaign, and we might fancy him feeling a touch of Alexander's sorrow at having nothing more to conquer. Fortunately this cause of grief is reserved for only a very few.—*AYRESHIRE GARDENER.*

A PLEA FOR ANNUALS.

ANNUALS now occupy, as garden decorative plants, a comparatively inferior position. They are subordinate in estimation to many of their floral compeers, yet they are "stars of earth"—stars, it may be, not of the first or second, but of the fifth or sixth magnitude, but their beauty could not be dispensed with.

I am aware that to the modern style of geometric and artistic gardens, annuals, as a rule, are not adapted; they neither give the continuous mass of colour nor the rigid and strictly defined outline which is found in other summer-flowering plants, but these are not sufficient reasons for their being banished altogether. A space in the gardens of most proprietors can be afforded for these chaste and graceful flowers. In mixed beds and borders they are most at home, and give a charm which only annuals can impart; in suburban plots they are most appropriate and always show to advantage, and this quiet style of garden embellishment without, is suggestive of, and leads to quiet comfort within.

No annuals, according to my taste, are seen to better advantage than those sown in autumn, and which are in their gayest attire on the very eve of summer. Although there are annuals in plenty sufficiently hardy to withstand our ordinary winters, the choice is very limited of those which bloom sufficiently early to be removed, without destroying their beauty, in time for the planting of our ordinary bedding plants. Now, however, that the taste for adapting for the decoration of our gardens plants indigenous to more tropical countries, is becoming diffused, more time will be given for many annuals to develop their beauty, inasmuch as sub-tropical plants cannot, in exposed gardens, be put out with safety for a month after *Pelargoniums*, *Calceolarias*, &c. Vacant beds and borders in winter look dead enough, but bare black soil in April and May appears far more dismally barren by contrast with the unfolding beauties of nature, which are then seen on every side.

It would be unseasonable, perhaps, to dwell longer just now on autumn-sown annuals; but even now there is just time to secure a crop of flowers on beds and borders which in exposed gardens it is proposed to furnish with sub-tropical plants for summer and autumn decoration. I may for a moment digress and say how suitable and effective are *Anemones* and *Ranunculus*, which can be bought so cheaply in quantity. I just name these as suggestive of other suitable bulbous plants, and pass on to the simpler, cheaper, but not less effective annuals, which, if sown at once, at the very first opportunity of the soil being in workable condition, will bloom and make enjoyable space that is to be occupied by tender stove subjects, and that might otherwise be for two months blank and bare.

Nemophilas of the *discoidalis*, *insignis*, and *maculata* varieties will, if sown now and guarded from slugs, make a charming late spring display, either in separate lines or beds, or in mixture; in themselves they possess a sufficient variety of colours to make a border very attractive and interesting. *Virginian Stocks*, the two colours, pink and white, make especially beautiful lines and lively beds, and come quickly into bloom. *Veronica glauca* and *syriaca*, blue and white, very quickly come into beauty, and are compact, profuse-flowering, and effective. There are other early-blooming annuals nearly if not quite as early as these. Seed of all those mentioned is remarkably cheap. For early-blooming, sow thickly and grow thickly, when, in a month or six weeks, flowers may be had well worth the money expended in seed.

But not solely as mere "fill-gaps," annuals are to be grown. In mixed borders and other suitable places no class of plants will better repay generous treatment. To insure their proper and natural development they must be cared for, and, above all, thinned-out well and in good time; but how seldom they receive this attention. The careless manner in which they are

in many instances sown and left to themselves to struggle out their existence, has more than anything else contributed to their disrepute. Better, far better, let them alone than treat them thus. Annuals in their nature are transient, but if thinned-out properly and early enough the duration of their period of beauty is thrice that of those which are sown and left to themselves, and which receive the reproaches of growers who might with more justice reproach themselves for having primarily contributed to such a state of things.

Annuals if required in patches in mixed beds and borders can be sown where intended to bloom, but I have always found this plan entail much trouble in protecting them from the ravages of slugs. The preferable plan is, on a perfectly hard bottom, to place a few inches of rough leaf mould and well-decayed manure, and on this an inch or two of sifted soil to sow the seed in. Sow in drills, and when the young plants have become strong remove them in patches in dull weather. By this mode of raising them they are under the eye and command in their infant state, when they are chiefly susceptible of injury, and almost every kind will remove with but little check, and will bloom, if not all the season, at any rate quite long enough to make room for the rapidly advancing growth of their associates.

It will be unnecessary to enumerate a general list, but I will describe a few of last year's novelties, all of which are quoted cheap enough in this year's catalogues:—*Tropæolum Lilli* Schmidt, compact in habit, profuse in blooming, and good in colour, flourished well in the hot weather of last summer. *Tropæolum pyramidale*, gay, but not so distinct in habit as its name would imply. *Tropæolum caruleum roseum*, very distinct and effective, but not so vigorous as the preceding; poor soil which is suitable to most of this class is not so necessary for this variety. *Clarkia pulchella marginata*, chaste, lively, and well worth growing. *Clarkia integrifolia carnea*, dwarf, distinct, and effective. *Eschscholtzia crocea striata*, pretty when close to the eye, but for general effect no improvement on the older varieties. *Nemophila discoidalis nigra*, the flowers when opening are like black velvet, and on this account it is curious and will be grown by many, but it does not throw its flowers sufficiently above its foliage. *Viscaria cardinalis* and *Viscaria elegans picta*, two charming varieties of this beautiful family, which should be included in even the smallest collections. *Whitlavia gloxinoides*, elegant and pleasing; a decided advance on the older varieties. *Whitlavia* should be sown where they are intended to bloom, as they cannot be removed so safely as most annuals, neither are they to be depended on for autumn sowing, as is sometimes recommended; they do not survive the winter well.—J. W.

THE VERBENA.

NEED I ask, what object in a flower garden can possibly be more attractive or interesting than a mixed bed of *Verbenas*? In such a bed we have endless variety of form and colour, a freshness and beauty of appearance, and a wealth of floral loveliness, equalled by hardly any other denizen of the parterre.

The only drawback in connection with the culture of this (with me) favourite class of plants, is that they are hardly lasting enough to be included in a strictly geometrical garden, where the occurrence of any blank would seriously affect the appearance of the whole design. It is in this respect, and only in this, that such kinds as *venosa*, *pulchella*, and *Melindres splendens* are at all superior, for in a comparison of form and colour those kinds which are known under the popular designation of "florists' flowers," will certainly bear away the palm.

I have frequently thought if a few independent beds (by this term, I mean beds that are not included in the principal pattern of the garden), could be introduced so as to afford space for such gems as *Verbenas*, *Portulacas*, and the like, they would not only add very much to the interest of the garden, but would also tend materially to relieve the monotony of the never-ending *Pelargonium*.

No two *Verbenas* can be better adapted for bedding purposes than *Crimson King* and *Purple King*, and they are both too excellent and too well known to need one word to recommend them, although probably *Crimson King* is too young a monarch to have achieved such world-wide renown as its venerable brother king. And this brings to mind how short-lived most *Verbenas* are; but very few varieties possess sufficient merit to cause them to be cared for after a year or two's trial. How

very far back in the history of Verbenas does the mention of such famous old sorts as Robinson's Defiance, Woodcock's Magnificent, and Barker's St. Margaret, seem to take one.

Of the few kinds which have withstood the test of years, *Géant des Batailles* still takes high rank, its fine truss and rich dark colour rendering it a valuable variety both for bedding and exhibition. General Simpson, too, is another sort whose fine form is rarely approached by any new variety; and as a rich dark kind for massing, I know none better than Mrs. Archer Clive, which has been in cultivation fourteen or fifteen years. Victory and King of the Verbenas are both excellent old sorts, with large distinct eyes.

Amongst newer kinds, *Cooling's Annie* offers itself to notice as the queen of striped Verbenas, the regularity and brilliancy of its markings causing it to surpass all other varieties in its section. More delicate than this, but hardly less lovely, is *Princess of Wales*. Another distinct striped kind is *Madame Hermann Stenger*, but it is a very uncertain variety, sometimes being very prettily striped, and at other times it is without any markings whatever.

Warrior may be mentioned as decidedly the best pink Verbena I have grown. It has a robust habit, a fine truss, and its colour is very deep and lasting—a rare quality in pink Verbenas, as hardly any of them will bear much hot sunshine; for instance, *Perry's Exquisite*, as regards size of truss, shape of flowers, and delicacy of colouring, leaves nothing to be desired, but if it is fully exposed to the burning rays of the summer's sun its beauty quickly fades. *Madame Lefevre* is a good kind, and from its close, erect habit, is well adapted for bedding, but it is likely to be superseded by *Perry's James Birbeck*, of last year.

Of scarlet shades there are many good kinds, some of which are too much alike to be called varieties. *Lord Leigh*, *Mazepa*, *Firefly*, and *Lady Victoria Scott*, a dwarf kind, are all distinct and good; *La Grande Boule de Neige* is a good white kind, either for exhibition or bedding; *Mauve Queen*, *Startler*, *Diamond*, *Meteor*, a fine scarlet, *William Dean*, and *Nemesis*, are all excellent varieties, of various shades of colour.

From new kinds, which I have only grown for one season, I may select *Shirley Hibberd*, *James Day*, *J. C. Ward*, and *Thomas Harris*. Several other new kinds I am uncertain about, but hope to report upon them after a farther trial.—*EDWARD LUCKHURST, Egerton House Gardens, Kent.*

THE DUTCH PRIZES FOR HYACINTHS.

It strikes me that somewhere or other there has been a great blunder in the distribution of these prizes in the Royal Horticultural Society's list; for if, as I conceive, the object of the givers was not all disinterested, but that they hoped to encourage the growth of the bulb here, and so to react on themselves, I think this object will be defeated. By making the prizes open these are virtually thrown into the hands of two or three growers for sale, for we all know the vast difference between the collections staged by one or two of our principal growers and the best exhibited by amateurs; while if the prizes had been divided so as to have given amateurs a chance by themselves, it might have led more to try their chances in the tournament. Now I think it would not be difficult to allocate the prizes beforehand.—*D., Deal.*

CULTURE OF GINGER.

The Ginger plant is grown in tropical countries in the open fields, in hot, dry, limey land, not in any way rich. It might be grown in England in any hot-house or Pine house in oblong earthenware pans 2 feet long by 1 foot wide, 6 or 8 inches deep, and 1 inch thick, with three holes in each side for drainage. These pans could be placed on the top of the hot-water pipes without doing the pipes any harm. One box of roots should be retained every year to plant-out in the following season; the rest should be made use of whilst young.

As soon as taken up the roots should be peeled, then put into stoneware jars, after which hot syrup, made of good sweet brown sugar, should be poured on the roots until the jars are quite full. I cannot say how the syrup is made, nor do I think it is ever made so well in England as it is in the West Indies, where the Ginger is always made use of when in a young state; whereas the Chinese is too old, stringy, and hot.

I may here mention the heated ground that C. Wykeham Martin, Esq., M.P., has adopted at Leeds Castle, near Maid-

stone. This is well adapted for growing many tropical plants during the summer months if the soil does not in depth exceed 8 or 10 inches. He places large moveable frames over any part of the ground, and has Peas and other early spring crops up and fit for use in a very short time.—*A. T.*

PEACH CULTIVATION.—No. 8.

RENOVATING OLD TREES.—Old trees very often become weak in wood, deficient in bearing wood, though plentifully furnished with a number of weak short shoots, and exhibit a preponderance of old worn-out branches. This is a very common condition of Peach trees as seen in gardens. It very often results from cropping the border excessively, in consequence of which the roots descend, or if they rise they are cut off by the spade in digging. The digging is not confined to that part of the border which is at a distance from the stem, but the part nearest the wall and the stem of the tree is employed for various purposes, and is dug or otherwise disturbed, so that the most essential portions of the roots—the fibres—are cut off. Now, as fine fruitful trees are desired, this practice must be abandoned. Another cause of the bad condition of Peach trees generally is laying-in too much wood, and cutting out none or but little of the old wood, so that there is often more than double the quantity of bare old wood than is needed, and it deprives the young shoots of nourishment, as all the old wood must be supplied before the sap finds its way into the young wood. Overbearing and the want of manuring, watering, and keeping free from insects likewise contribute to the premature decay of the Peach tree.

There are other causes of the decay of Peach trees, such as the borders being deep, badly drained, and improperly constituted; the wood is then long and sappy, never or seldom ripening well, and fine perfectly-ripened fruit is an exception. Sometimes the growths are long and weak, and are certain to die back every winter; and there are other cases of debility, the results of improper treatment, one of the most general being that the growths are weak and fall a prey to mildew. These cases might be added to considerably, and even then there would be others attributable to peculiarities of soil and various circumstances.

Before attempting anything with Peach trees in the condition above referred to, the border must first be examined and put in a proper state. If the border is irremediably bad a new border must be made, but in this it will be a question whether it would not be desirable also to plant young trees in place of the old ones. If the trees are old, and the branches very thick and bare, with no prospect of speedily replacing them, I should prefer young trees; indeed, I would recommend such for all new borders, as they will in a short time cover a large extent of wall, and their produce will be finer than that of old worn-out trees.

The best and only means of renovating old trees when the border does not require to be renewed, is to take out a semi-circular trench about 3 feet from the stem, making it about 2 feet in width, and as deep as the roots extend. This should be done early in November, or from that time to the middle of December. All roots thicker than a straw should be cut off close to where the soil is left undisturbed, or 3 feet from the stem. If, from the appearance of the roots, it is evident that they have gone down by the wall, remove the loose soil from them or down to them, and work under the ball at such a depth from the surface as will allow of your keeping under the bulk of the roots found at 3 feet from the stem. Move only a portion of the roots at a time, cut off all that go down, and before undermining another part place slates or some material that will prevent the roots descending; then replace the old soil with fresh, and in this manner proceed with the whole, filling the trench up again with fresh soil, using no part of the old, and placing fresh soil over the roots. If the roots are deep, and will be covered to a greater depth than 3 inches, lift the tree altogether, preserving all the soil practicable, and after using means to prevent the roots going downwards, such as slates, old flags, or concrete, place sufficient soil in the hole to raise the tree, so that when it is planted the upper fibres will not be covered more than 3 inches, for it is well to have the tree slightly raised above the surrounding level. The soil most suitable for filling up the trench and placing over the roots, or if the tree is lifted for planting, is the top 2 or 3 inches of a pasture, turf included, where the natural soil is a rich, rather strong yellow loam. This must be chopped up, and to it

should be added one-fourth of rotten manure, cow dung being best. The soil when used should be made firm by treading, and fine weather ought to be chosen, for if wet it will be apt to become little better than mud. Mulch from the stem to a little beyond the outside of the trench with 3 inches thick of short littery manure. This will serve the tree for about two years, when another trench may be taken out, and another width of fresh compost added. The trench previously taken out and refilled with fresh soil ought not to be disturbed. In this way the border may be entirely renewed, and the trees will gain vigour accordingly, though it will not be necessary to proceed beyond the second trench if the soil of the border is good, and liberally manured.

The trees will have been unnailed or untied before fastening up permanently, which need not be performed until the buds begin to swell in spring; but do it before they are far advanced, cutting out any of the oldest branches that are deficient in young wood, preserving as much of the latter as possible, yet do not leave more branches than will be needed to cover the wall at 1 foot apart, and let the bearing wood on them be from 9 inches to a foot apart. If there is an old naked branch, and a young shoot well disposed for succeeding it, by all means cut off the old branch, and train the young in its place, always preferring young to old wood. A sufficient number of shoots should be left for bearing, and they should be shortened one-third more than had there been no root-pruning or lifting of the tree.

With due regard to watering and syringing, the trees treated in the manner described will bear as well as if their roots had not been interfered with, and will make good growths. I have repeatedly tried the above plan, and in no instance failed to secure better growth, shorter-jointed, stronger bearing wood well set with buds, and finer fruit. The Peach, or rather the Plum upon which it is worked, is apt to produce fibres near the stem; indeed, in old trees, they are never absent, and by encouraging these we obtain, as it were, a new set of roots in place of the old fibreless ones which are of as little value for food-collecting as the old bare branches are for fruit. When the tree is little else than bare branches, and is but scantily furnished with bearing wood, make sure that the roots are as bare of fibres as the branches are of young shoots, and to have one it is necessary to have the other.—G. ABBEY.

ROSE CUTTINGS.

I HAVE just read Mr. Luckhurst's very timely and valuable suggestions about Rose cuttings. It was not till last year that I tried propagating roses by cuttings, and during the summer and autumn I inserted some hundreds, but did not succeed in rooting 20 per cent. (except China Roses, which will strike almost at any time), until September, when I placed them in a little bottom heat. In this batch were some of the best Hybrid Perpetuals, including Alfred Colomb and Comtesse de Charbrillant, which rooted readily, but I have not been able to induce Pierre Notting to emit roots as yet.

I think one cause of my non-success during the summer was, that my frames were facing the south, and I found that the least sunshine withered the cuttings at once. Another cause was, perhaps, that it requires some experience to choose the wood when ripe for cuttings. Doubtless, the cuttings described by Mr. Luckhurst are those suitable for striking in a cold frame, but in bottom heat I have struck many taken from strong shoots cut into lengths with three or four eyes to each.

I was disappointed that Mr. Luckhurst said nothing of spring propagation, but I trust he is reserving that for another occasion. I am assured that as soon as the buds start cuttings will strike most readily. I should be very glad to know from any of your correspondents if this is correct, and whether the prunings may not be used for the purpose, as the buds are starting so early this year.—B. KNOTT.

EARLY WILD FLOWERS.—I have this morning (February 9th), received from Mr. Draper, Seaham Hall Gardens, near Sunderland, a fully-developed flower of *Lychnis sylvestris* (Red Campion or Wood Lychnis), which he gathered the day before. Mr. Draper says, "I have this day explored the woods here, and found the Wood Lychnis about a foot high in perfect bloom—such a sight at this season of the year. I believe that there is no record of such an early flowering of the *Lychnis* in these northern parts."

The other day while walking with a friend along the banks

of the Tyne, about ten or twelve miles above Newcastle, we marked a Primrose in bloom. It was on a sloping bank facing about S.S.W. For the last fortnight or more a Primrose, which I transferred from the field last spring to a border facing east beneath my study window, has been well out in flower. We are generally later in this exposed seaside place than our more favoured neighbours farther inland. The thrushes have been singing gloriously for two or three weeks past.—R. F. WHEELER, *Whitley Vicarage, Northumberland.*

THE CLASSIFICATION OF PELARGONIUMS.

THE following letter from the other side of the world gives me the opportunity of saying a few words in reply on the present classification of Pelargoniums—a subject fraught with no little difficulty, and very puzzling indeed to outsiders.

"I shall esteem it a great favour if you will kindly answer the following questions. In this part of the globe it is a difficult matter to obtain information on floriculture, there being no recognised authority to whom we can refer knotty or disputed points. 1, What classes should Pelargoniums be divided into for a catalogue? 2, What is the definition of Fancy Pelargonium? 3, What is a Spotted and what is a French variety? 4, Is there any difference between a Spotted and a French variety? if so, what is the difference? 5, What recent work on the Pelargonium can you recommend? 6, Is Glenn's work on the properties of flowers a recognised authority?—J. F. PASCOE, *Adelaide.*"

As florists' flowers are in themselves matters of purely arbitrary taste, though, as I believe, a taste founded on correct principles, it is not to be wondered at that the classes into which they are divided should be arbitrary also. What can be more absurd than to make a Dahlia with a white ground and a purple edge a Show Dahlia, and another with the colours reversed—i.e., a purple ground and a white edge, a Fancy? Yes, there is one thing more absurd still, and that is the attempt to alter it. These things have become well established in the horticultural mind, they are perfectly well understood, and an interloper in either class would very soon be detected; and, therefore, when a correspondent wishes me to define what a Fancy Pelargonium is, I can only reply that definitions are always very difficult, and that the safest reply is, it is a Fancy Pelargonium.

There are (leaving on one side the Zonal section), three classes into which Pelargoniums are and may be divided for a catalogue—viz., Show, Fancy, and French varieties. Formerly there was a fourth class, Spotted, but that has now been merged in the first.

The Show Pelargonium, or Large-flowered, as it had better be called—for the Fancy section is equally available for the purpose of exhibition—is well known, but, as I have said, not easy to define. The ground colour varies from white to deep crimson, and the petals may be either spotted or painted—that is, streaked with faint lines, or nearly altogether covered with a deep blotch of dark maroon or black; the foliage is ample, and the individual leaves large. The Fancy section is composed of plants varying very much from the foregoing both in the character of the foliage and in the flower; the foliage is smaller and neater, and the plant more compact in habit, requiring, too, somewhat more heat, and being more impatient of damp; the flowers are also smaller and rounder, produced in trusses more numerous and more filled. The French varieties are very different from either; they lay claim to no regularity of outline, are sometimes even frilled, as in Dr. Andry, and with very odd combinations of colour, very showy and effective for bouquets or on a stage, as they are very free-flowering.

Glenn's work is far the best on the properties of florists' flowers, and is the universally recognised authority. There was, I believe, a brochure by Mr. Charles Turner, of Slough, published some years ago on the culture of Pelargoniums, but I know of no recent work on the subject.—D., *Deal.*

BURNING CLAY FOR GARDEN WALKS.

As you wish me to give an account of my mode of burning clay for garden walks, I will endeavour to do so as briefly as I can.

In the first place select the ground for the fire as near the clay as possible, and then make a good fire of wood and coal of about 3 or 4 feet through. When about three-fourths burnt put on your clay from the bottom upwards all round—one

good spit or spadeful then add more small coal over, so that, the clay may assume a thoroughly red glow to begin with. If that result be not attained all your efforts will be futile. As you perceive that the fire makes head you may add the clay to almost any quantity with no great expense of coal, for one load of coal will suffice to form fifty loads of well-burnt clay. Take every care to keep the fire as fully in the centre of the mass as possible. Should windy weather prevail use straw hurdles to ward off the wind from the exposed side, or it will blow the fire all to one side, or, perhaps, extinguish it.—C. C.

THE PORTABLE ORCHARD.

(Continued from page 107.)

SUPPOSING, then, that you have a Pear tree fit for potting, and the pot to put it in, the next step is to plant the tree therein, and though carelessness may not do as much mischief as in the case of ordinary pots, yet extra care will produce extra growth.

First, then, see how much of the roots you can by coiling get inside the pots, and cut away no more than necessary to let the tree down to the neck at the rim, or an inch or two above it. The neck of the tree is that part of the stem which swells to give out the roots, and in the case of Pears grafted on the Quince, it ought to be no more than 3 inches below the junction of the graft with the stock. Having trimmed the roots, cutting off with a sharp knife all broken ends, and making the cuts as "square" as possible to the root and just beyond an eye, put a layer of broken pots, tiles, or bricks at the bottom of the pot, and on the top of this layer another of some fibrous material, such as cocoa-nut fibre refuse or the top-paring of a pasture. Next, put the tree into its place, and introduce amongst the roots bones broken up into manageable pieces, old shoes cut into pieces, or any parings of hoofs from the shoeing-smith's shop; then fill in, and by small quantities at a time, with a compost formed of stiff loam, pasture parings, old manure, and old lime rubbish in about equal parts, and with a stout stick about as thick as a rake handle at one end, and twice as thick at the other, ram the soil firmly in between the roots, taking good care, however, not to bruise them. As the pot becomes filled the rammer may be used more vigorously, and at last the pot must be rammed quite full, for we need not leave any space for watering, as the pot is finally to be plunged overhead in the ground.

In all cases the compost should be mixed and turned over some time before being used, but so much depends upon the soil of each district, that there is little use in giving advice about the proportions of any compost; in a chalky soil little or no lime need be added, and in very heavy soil sand or road scrapings, with vegetable fibre, will improve the compost much; but in the case of light vegetable moulds deficient in aluminous matter, it is hard to say what can be done. I rather think we must look for the remedy in another direction. A lady is at present trying to overcome this very difficulty in North Wales, where the climate is all that can be desired for Pear trees, but the soil is peat, and the subsoil syenite. The most vigorous weed of the district is the Mountain Ash, consequently I sent her a variety of Pear scions to graft upon it. All, I hear, are growing, though I purposely sent some that would not grow upon the Quince. The results will be most important in more respects than this one of suiting stock to soil, for we know as yet very little of the effect of the stock upon the fruit, and I may say, in passing, that experiments in this direction are just the right kind for amateurs to make. Nurserymen do not grow trees for fruiting themselves, and the number of combinations that can be formed out of three or four varieties of stocks, and a score only of varieties of scions, single and double grafted, is so large (1600), that few men who know what amount of patience would be needed for fairly working it out, would have the courage to undertake the complete solution of the question from grafting to fruiting, yet each result so obtained is a step in our knowledge.

After the trees have been potted early in autumn, and plunged as before directed for a sufficient length of time to enable them to take hold of the earth inside, and before the cold heavy rains drench the ground (which is commonly the case early in November), they should be stored for the winter along with those which have been grown on this system during the preceding summer. This storing may as well be described at once, as it is the same for all. In the first place a trench, or double trench, as the case may be, is dug in any convenient place, and the earth

thrown out is made the foundation for the lowest tier of the pots which are to lie on their sides for the winter; and unless this lowest tier is raised above the ground, the chances are that much mischief will follow every fall of snow.

Where space is an object it is well to put up a two-course wall of the pots, leaving the stems of the trees to stick out horizontally on both sides; but where a wall can be found fit for piling them against, I think it is better to keep to a single course, and a north wall is the best for the purpose, as it helps to retard the trees. The first layer ought to be firmly packed closely together, and with soil between the pots to keep them firm and prevent the access of cold winds to the roots, and it will be very necessary to take care that the end pots are secured from rolling out by driving a stake in, or having some such security. It will also be easily seen that the next course cannot be put up from the front, as the projecting stems are in the way, and in all cases the best plan is to complete the pile up to the highest course as soon as possible by laying only so much of the foundation course as is wanted. A four-course pile will require four pots to be laid for the foundation, a five-course will require five, and these piles will be quite as high as can be made with advantage.

Each course is levelled and filled up as the work goes on. If I could obtain cocoa-nut fibre refuse in sufficient quantity I would use nothing else for filling up the interstices; as it is, I generally use for the purpose the compost heap, which thus gets a turning.

After the whole pile is completed it requires a sloping cover of sods, or a rough thatching to throw the rain off. A thin facing of straw in front of the pots is needed to prevent the freezing of the soil, which would be apt to take place in severe weather, the expansion of the water in becoming ice forcing out the soil near the surface, and unless this were covered, rain beating against it would be sure to leave moisture enough to allow of such mischief. It may be said, Why not store the trees in a room? My answer is, The branches are all the better for the exposure, provided the roots are dry; if they were under cover they would start too early. Covering all is quite right when there are means of keeping up the temperature and raising it steadily as the blossoms expand; but that requires glass, and we are now trying what can be done without it. Figs, I think, may be successfully treated in this way, at least in the warmer parts of England, for last year I kept some in a wooden out-house till the end of May, and they did not cast the small Figs formed in the preceding autumn, but ripened them well.—W. KINGSLEY.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 16TH.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. The exhibition of fruit this day was one of the finest we have ever seen at this season, two long tables being covered with numerous varieties, which for beauty could not be surpassed.

At this meeting various prizes were offered; but before examining the collections sent in competition the Committee took those which were sent merely for exhibition. Mr. Rivers, of Sawbridge, sent a rich collection of twenty-two sorts of Apples splendidly kept, and good specimens of the sorts, among which were Baddow Pippin, Mannington's Pearmain, Calville Blanche, Yellow Bellefleur, Gooseberry, Boston Russet, Baldwin, and others too numerous to mention. To these a special certificate was awarded. Mr. Gooding, gardener to Sir John Neeld, Grittleton, sent well-grown fruit of the Malta Blood Orange, large and handsome, but they were acid. Mr. Charles Allen, gardener to Capt. B. Clegg, Withington Hall, sent a small bunch of Chasselas Napoléon. This was rather an interesting exhibition, as there are two varieties grown under that name, one an inferior variety; but this was the true sort, and is a large white oval Grape, as large as a Muscat of Alexandria. Mr. Davis, of Barnet, sent a basket of 16 lbs. of Lady Downe's Grapes, very fine indeed in size of bunch and colour. They were awarded a special certificate. Mr. Miles, gardener to Lord Carrington, sent fruit of a Solanum which had been received from a gentleman under the name of Solanum gnissados. It is an oval fruit, the size of that of Passiflora carnlea or kermesina, and of a bright orange colour. Mr. Gilbert, gardener to the Marquis of Exeter, Burghley, sent baskets of Mushrooms of very large size, "the buttons" being as large as a good-sized orange. They elicited the admiration of the Committee. He also sent a winter salad, consisting of Celery, Chicory, Lettuce of three kinds, Onions, Radish, Mustard and Cress, Tarragon, Parsley, and Beet; likewise some forced Asparagus, Sea-kale, and Cucumber. To the whole collection a special certificate was awarded. Mr. Henry Vallance, Farnham Royal, Bucks, sent dishes of good specimens of Winter Greening or French Crab, also a specimen of the same two years old. Mr. A. Hossack, the Gardens, Alderley, sent

fruit of a seedling Apple, which did not meet with the approval of the Committee.

The Committee then proceeded to the examination of the competition for prizes. The first class taken was for the best single dish of Pears. Mr. Beach, gardener to C. J. Herries, Esq., sent *Eastar Beurré*, which, though good, were flat. Mr. Earley, of Digswell, sent *Gloa Morcean*, which were fine specimens, but rather astringent. Mr. Park, Grove Hall, Refford, sent two dishes of *Beurré de Rance*, both excellent, and Knight's Monarch, also excellent. Mr. Miles, gardener to Lord Carrington, sent also a dish of *Beurré de Rance*, which was astringent. Mr. Sorley, gardener to Mrs. Zwilchenbart, Aigburth, Liverpool, sent *Beurré de Rance*, also excellent. Mr. Gardiner, of Easington Park, sent Knight's Monarch. Mr. Wells, Holme Lacey, sent *Ne Plus Meuris*, which were not ripe; and Mr. Parsons, of Welwyn, sent *Ne Plus Meuris*. The first prize was awarded to Mr. Sorley, the second to Mr. Parsons, and the third to Mr. Gardiner.

In the class for dessert Apples, single dish, there were no less than twenty-seven exhibitions. The first prize was awarded to the Ribston Pippin of Mr. Saul, Stourton Park; the second to the Braddick's Nonpareil of Mr. Wells, of Holme Lacy Gardens, Hereford; and the third to the Cox's Orange Pippin of Mr. Whiting, of The Deepdene. In the class of three dishes of dessert Apples there were twenty-eight exhibitors. The first prize was awarded to the dishes of Mickleham Pearmain, Cox's Orange Pippin, and Ashmead's Kernel, exhibited by Mr. Whiting. The second prize was awarded to Mr. Cox, of Redleaf. The third prize was awarded to Mr. Saul, of Stourton Park.

In the class for kitchen Apples, in which there were fifteen exhibitors, Mr. Lynn, of Hedsor, obtained the first prize: Mr. Ford, of Leonardlee, was second; and Mr. Cox, of Redleaf, third.

Messrs. Stuart & Mein, of Kelso, received a special certificate for a fine collection of Variegated Kale.

FLORAL COMMITTEE.—Rev. J. Dix in the chair. Mr. Boyce, Clapham Nursery, sent three large and well-grown plants of double *Primula sinensis*. A special certificate was awarded. Messrs. Smith, of Dulwich, also exhibited a collection of single and double *Primulas*, for which a special certificate was given. Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, exhibited some very fine specimens of *Cyclamens*, which were awarded a special certificate. There were among them many very distinct flowers, the high colour of some being most attractive, and the stripes and spots of others were very beautiful. Mr. Wiggins also sent a large collection of *Primulas*, which received a special certificate.

Mr. Bull sent several specimens; among them *Phormium Cookii* variegatum, received a first-class certificate. This plant was entirely distinct from the *Phormium Cookii* exhibited by Messrs. Veitch, and the decision of the proper names and species was left to the Rev. M. J. Berkeley. *Camellia La Macflosa*, a beautifully formed red and white flower, very handsome, received a first-class certificate. *Camellia Bononiensis*, *Theresa Negri*, and *Quercifolia* were passed. A collection of Orchids and other plants was awarded a special certificate.

Mr. T. Charles, gardener to R. Barnett, Esq., sent *Cattleya Alicia*, one of the many varieties which now exist. Messrs. Veitch sent *Dendrobium Devonianum rhodoneurum*, *D. lasioglossum*—first-class certificate; *D. crassinode*—first-class certificate; *D. macrophyllum Huttoni*, *D. moniliforme* or *japonicum*, *Cattleya* species from Chocho, Epidendrum sp.; *Cypripedium Harrisonianum*, a hybrid of great promise, raised by the indefatigable Mr. Dominy between *C. barbatum* and *C. villosum*. A first-class certificate was awarded it. Messrs. Veitch had likewise *Phormium tenax*, *P. tenax variegatum*, *P. Cookii*, and *P. Cookii variegatum*, and the two latter plants seemed distinct from the others shown under the same names. Messrs. Veitch exhibited a group of spring greenhouse flowers, *Hyacinthus*, *Narcissus*, &c., and among them a double *Prunus*, also *Spiræa Thunbergii*, both hardy plants, and very useful for forcing. A special certificate was awarded. Mr. Parsons, Acton Green, sent plants of *Clematis indivisa lobata*, very useful for this early season.

Mr. B. S. Williams, Holloway, sent a collection of *Cyclamens* and *Solanums*, together with other plants, and a special certificate was awarded. He also exhibited a fine strain of *Primula sinensis* of an intense bright colour, the finest variety yet raised. A first-class certificate was awarded it. Messrs. Lee, Hammersmith, sent two double *Primulas*, white and pinkish rose, and a special certificate was awarded. Messrs. Windebanks, Southampton, sent a collection of seedling *Primula sinensis*; two of them with double flowers—viz., Miss Kingsbury, a white-striped variety, and Snowflake, pure white, received first-class certificates.

Messrs. E. G. Henderson sent a collection of plants, including *Tri-choplias* and other Orchids, and a special certificate was given. Mr. Green, gardener to W. W. Saunders, Esq., received a special certificate for a hybrid *Sonchus*, the plants being most elegant and useful for table decoration. *Sonchus laciniatus* and *S. gunnifer* were the parent plants. Mr. Fairbairn, Syon House, sent a fine specimen of *Dendrobium speciosum*, for which a special certificate was awarded. Messrs. Downie, Laird, & Laing exhibited *Coleus Baroness Rothschild*, one of the Chiswick seedlings, and it received a first-class certificate. Mr. W. Paul sent a new white *Primula*; the footstalks of the leaves and flower stems were red, an unusual occurrence with white flowers. It was requested that this plant should be sent again, as it was out of condition.

This was a most successful exhibition, and the attendance of the

Fellows unusually numerous. The cut *Camellias* from Mr. W. Paul, Messrs. Veitch, and others, were much admired, and some of them distributed among the ladies after the meeting.

SCIENTIFIC COMMITTEE.—W. Wilson Saunders, Esq., F.R.S., in the chair. Mr. Berkeley, referring to the disease in the Telegraph Cucumber which was before the last meeting, stated that he had discovered numerous vibrios in cells amongst the cellular tissue of the plant, and that it was his opinion their presence had produced the disease.

A report was read from Mr. Barron on the condition of Apple trees grafted on various stocks now growing in the garden at Chiswick. These trees were grafted about the year 1824. The appearance now presented shows that after so long a period there is little or no difference in size and vigour between those grafted on the Crab and the Doucin; and those on the English Paradise and the French Paradise are smaller trees, but do not differ in stature materially from each other, but those grafted on the French Paradise canker, while the others do not.

An imported bulb of the Hyacinth Robert Steiger was sent by the gardener to G. Simpson, Esq. The normal colour of this variety is a fine carmine, but in this case the flowers were a bright green, the colour of the foliage. The shape and consistence of each flower had undergone a change; the tubes were more elongated, upright, and thinner—altogether abnormal, but the anthers had retained their usual crimson colour. Mr. W. W. Saunders observed that many Hyacinths had a green point to the petals, showing their tendency to assume a green colour.

A plant of *Abutilon Thompsonii*, grafted on a green stock, was sent by Messrs. E. G. Henderson, of Wellington Road, showing the variegation extending to shoots of the stock, both above and below the graft, so that both plants had become equally variegated. It was arranged that the experiment should be repeated at Chiswick, to see if the like result would be obtained.

Mr. Saunders exhibited several leaves, all of which had been taken from one plant of *Cyclamen europæum*. The character of almost every leaf was different; some were rounded, others reniform, while others again exhibited the usual angular or Ivy-leaf form. The colours varied also, some having the white centre, and the rest altogether green.

Professor Westwood reported the results of his examination of the bulbs from some imported Orchids which had been submitted to him for investigation at the former meeting. The spaces between the leaves of the buds he found occupied by parts of two distinct Hymenopterous insects. *Eurytoma* was the name of one, which deposits its eggs in the bodies of other insects; the name of the other he had not determined, and he stated that an American naturalist had found all the species of *Eurytoma* to be parasitical, except one which he found on the Wheat.

Dr. Masters made some observations on a branch of Mistletoe, which had both male and female flowers. It was decided to be a real growth and not a graft; the leaves of the male portion of the branch were much broader than those on the female.

A paper was communicated from Mr. Henry Taylor, of Bedale, Yorkshire, on grafting Potatoes on their roots. He grows Potatoes for the market, and gave the results of his grafting on twelve different sorts. He does this by removing all the eyes of the Potato, and inserting the eyes of the other kind. The Committee recommended the experiment to be repeated at Chiswick.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. A list of donations of plants, &c., having been read, and a vote of thanks passed to the givers, nineteen new Fellows were elected. The awards of the Committees were next announced, the Rev. J. Dix at the same time calling attention to the enamel used for faces of watches and clocks as a material for plant labels.

Mr. Saunders asked the Chairman of the Fruit Committee if it had been ascertained how the fine fruit exhibited had been preserved in such high condition to this period of the season.

Mr. Wilson replied that had not been done on this occasion, but last year they had found the best mode of keeping fruit had been open on boards. The subject, however, would be brought forward at the next meeting of the Committee.

The Rev. M. J. Berkeley, in his observations on the subjects exhibited, remarked that *Hoteia japonica* and *Spiræa Thunbergii* are perfectly hardy, and very decorative in spring. He also produced two flowering branchlets of *Prunus myrobalana* and *Prunus sinensis*, adding that nothing could be more beautiful than the trees of these now in blossom at Chiswick. *Cypripedium Harrisonianum*, one of Mr. Dominy's hybrids, was then noticed as being exactly intermediate between its parents *C. barbatum* and *C. villosum*, and not only extremely interesting on that account, but also extremely beautiful. With respect to the different kinds of *Phormium* shown, he could not say whether they were distinct species or not, but he would examine them, and report the result to the next meeting.

Mr. Berkeley next adverted to *Pelargonium faldidum*, brought by Major Trevor Clarke, and which was interesting as one of the parents of our present race of bedding *Pelargoniums*; also to some beautiful plants of *Pelargonium triste*, *flavum*, *filipedunculatum*, &c., in hanging baskets, Mr. Berkeley remarking that he had seen a collection of little-grown species, such as the above, many years ago, but of late

they had been utterly neglected, and were only to be found in "The Refuge" ["Refugium Botanicum," see page 29], and a most valuable refuge it was. With reference to a plant of the wild Cabbage, which Major Clarke had brought from Wales, Mr. Berkeley said he had some years ago seeds of one from Abergele, but he never got the slightest variation, and all the plants raised were of the Kale tribe rather than like Cabbage. The large and excellent Mushrooms from Mr. Gilbert, gardener to the Marquis of Exeter, were next spoken of in terms of high commendation, and as being perfectly free from the parasite with which so many of the Mushrooms exhibited are found to be affected. The Solanum from Lord Carrington's gardener was referred to as having a subacid fruit, which would probably be about as useful as the Cape Gooseberry; likewise the grafted Abutilon, green-flowered Hyacinth, and the disease in Cucumber roots, subjects which are all fully noticed in the report of the proceedings of the Scientific Committee. The diseased Peach shoots brought to the previous meeting from Lord Winchelsea's garden had been shown, it was said, to two of the highest authorities in fruit culture, and they both agreed that the cause of the evil was probably the exceptional weather last year and this; but Mr. Berkeley stated he had been informed that the shoots were every year the same. He then quoted a notice of a pamphlet on canker, by Mr. John Pearson, of Bewdley, whose notion was that the buds of the half-ripened wood are affected by the alternations of wet and cold weather, with heat and drought, during the summer, and this Mr. Pearson had attempted to prove by causing a stream of water to pass over denuded buds with intervals of rest, the result being canker or gum; and the remedy recommended was to protect the trees, especially when young, with screens. In many cases, however, Mr. Berkeley added, the evil proceeds from the bud itself. In connection with some diseased Vine roots, which were to have been at the meeting, some remarks were made as to the danger of using undecomposed vegetable matter near the roots of plants, as such substances might be the means of placing the roots in contact with the mycelium of fungi. In the case of the Vines in question a top-dressing had been applied when it was found that the roots were in an unsatisfactory condition, and healthy roots had been produced above the diseased ones, but if the soil in which the latter are placed be not removed the Vines must die. Mr. Berkeley concluded by pointing out *Morrea speciosa*, than which, he said, there were few more beautiful objects.

Mr. Wilson Saunders remarked, in reference to the Phormiums, that though it may be doubtful whether one, two, or three species exist, still with him there was a Phormium, or New Zealand Flax, growing out of doors in a warm position in front of a conservatory, and which only required to be matted-up in the winter, while there was another, shorter, thicker, and red-edged, which was much more tender. Passing to the neglected species of Pelargoniums previously referred to, Mr. Saunders said that they should be grown in a basket with a little moss, and their delicate leaves, at first erect, then gradually assume a drooping position. They were deliciously sweet-smelling. During the last thirty years he had brought together a collection of two hundred species, and he kindly offered plants to any Fellow present who was determined to undertake the cultivation of such neglected species. He thought that we were running out our Pelargoniums, and ought to "try back," especially as among the two hundred species there was a great variety of colour. As regards the wild Cabbage, it was common on most parts of the coast, but the Dover variety was rather different from the one that was shown, the leaves being more glaucous, thicker, and not lobed so much. It might, however, be questioned whether they were both the wild Cabbage, or the common Cabbage run wild. He would caution anyone sowing the wild Cabbage seeds, except at a distance from the cultivated varieties of the Cabbage tribe, otherwise much mischief might result. The only other subject he wished to notice was the hybrid *Sonchus*, between *S. laciniatus* and *S. gummiifer*, and which formed a most beautiful object for dinner-table decoration, the foliage being semi-transparent, so much so that one could almost see the light through them, but it was not so with Ferns, beautiful as they are for the same purpose. The plant could be struck readily from cuttings, and could thus be kept true.

Mr. Berkeley said his only object in bringing the wild Cabbage before the meeting was to state he had grown it five years from seed without variation.

Major R. Trevor Clarke remarked that Mr. Saunders had said the present race of Pelargoniums was being worn out, and he himself (Major Clarke) had once had a try at "barking back" in the chase. He had used the old *P. fulgidum* and fertilised some of the best scarlet varieties with it. He was convinced that anyone who undertook this kind of work must exert a vast amount of patience, for it took generation after generation to obtain a good result. With him the finest and richest colours (and he had some very rich), came after the first generation, but it was then necessary to breed-in, and he had found after a certain number of generations the hybrids had an awkward habit of becoming sterile. Major Clarke concluded by drawing attention to a branch of a remarkable variegated Holly, which reproduces itself in a variegated state from seed.

The Chairman then announced that the next meeting would be held on the 2nd of March.

MISTLETOE CULTURE.—I am constantly seeing accounts of unsuccessful attempts to grow the Mistletoe. Four years ago I

planted some berries, and have now about a dozen nice plants. If your readers will adopt my plan, I think they will have no difficulty in growing it. I squeeze the berry on to the under side of a smooth-skinned bough of Apple, Thorn, or any of the trees on which it generally grows, and bind it there with the means that surrounds the seed. In a few days the seed will adhere to the bough as firmly as if it were glued. The following summer it will send out a small shoot, which will curve over to the bark, and press into it, causing the bough to swell slightly. I think it is a mistake to cut the bark, as it causes it to open, leaving nothing for the seed to root into. I generally tie a piece of white tape a few inches from it, to keep birds away, and mark where the seed is planted. My seeds planted at Christmas, 1867, are all growing, and those planted this Christmas are now quite firm on the bough.—S. C. HINCKS.—(*Science Gossip*.)

EPHIPHYLLUM TRUNCATUM CULTURE.

This is generally classed as an evergreen stove shrub; but our plants do not receive stove treatment; in fact, it is just the plant to be safely recommended to the amateur with a vinery or greenhouse, and a Cucumber pit. For nine months in the year it will do well in the greenhouse, and during the other three months it wants a close moist heat, such as that afforded by a vinery at work, a Cucumber frame, or even a warm greenhouse. It may be grown as a dwarf on its own roots, as a standard grafted on a stem of the desired height, or in a pyramidal form; but it is as a pyramidal plant that it is seen to the best advantage. Imagine a close, well-grown specimen 3 feet in height, as much in diameter at the base, and tapering gradually from the bottom upwards till it ends in a single branch at the top, the bottom branches drooping gracefully over and nearly hiding the sides of the pot, and judge how effective it must be.

To form pyramidal plants I have used as a stock with satisfactory results, *Cereus speciosissimus*, commonly called *Cactus speciosissimus*. In spring, as soon as the *Epiphyllum* begins to show signs of growth, select a stock of the desired height, remove all the spines, by cutting a slice from each of the four corners of the stock from the bottom upwards, thus preventing the stock from making any shoots afterwards; choose scions or grafts of different sizes, from 1 inch to 6 inches in length, and cut the ends of the scions on both sides wedge-shaped. Begin to form the pyramid by making a downward slanting cut across the corner of the stock, commencing at the bottom, press in the scion, and secure it in its place with a small piece of Cuba bast or string. Proceed thus spirally round the stock, using shorter scions by degrees till you reach the top, and put the last graft upright in the centre of the stock.

After grafting, if there is a Cucumber frame at work place the plant in it, syringe it three or four times daily, and shade it from strong sun until the grafts begin to grow. When the plant has made its season's growth remove it to the greenhouse or conservatory. If there is not a Cucumber pit available, set the plant in the most close and shady place in the greenhouse, vinery, or conservatory, and syringe as before described.

To show that the *Epiphyllum* grows as fast, if not considerably faster, and blooms as freely when worked on the *Cereus* stock, as when on its own roots, I may just mention that a pyramidal plant grafted here in the spring of 1863, though the scions used were very short, the largest being not more than 2 or 3 inches in length, was, on December 24th, 2 feet in height, and 1 foot in diameter at the top of the pot. It had eighteen flowers, and would have produced at least three dozen if I had not pulled them off.

With regard to soil, almost every cultivator has a favourite compost. That which I now use consists of about equal parts of fibrous loam, leaf mould, silver sand, rotten manure, and lumps of charcoal, about the size of a filbert. I drain the pots well, and cover the drainage with scalded sphagnum.

At all times keep the leaves of the plants free from dust, soot, or any other impurities. I have never seen the plants much infested with insects of any kind. Here we are troubled with a nuisance worse than even the mealy bug—the smoky, sulphurous atmosphere, for we are situated within five minutes' walk of the centre of a town of eighteen or twenty thousand inhabitants, and surrounded with a host of tall mill chimneys, which are continually pouring forth their thick and black smoke, and almost making darkness at midday. To meet this evil, we ply the syringe freely, and frequently sponge the plants with soft soap and water. Thus treated they seem to bid defiance

to the thickest smoke—no mean recommendation, especially to those who reside in or near some of our manufacturing towns.—J. MITCHELL, *Bacup, Lancashire.*

STRUCTURES FOR MUSHROOM CULTURE.

In No. 407 of this Journal, "R. G." says, "I never use any fire heat, as I consider that a piece of useless extravagance. Better Mushrooms can be grown without fire heat than with it." I admit that equally good Mushrooms can be grown without fire heat, but not better. Heat there must be, and even "R. G." must have a shed, therefore the question at issue is, Shall we for growing Mushrooms have a shed or "grand dungeon" heated by fire, or have Mushrooms growing in a shed, the heating materials being straw or long litter. "R. G." does not tell us whether the shed is used for any other purpose, such as stokeholes; if for no other purpose, then I must call it a Mushroom shed unheated. If only one bed is made on the floor, the shed must be very long for the continuous supply of a family, and a large heap of covering material will be required for maintaining even in an ordinary winter a temperature of from 50° to 60°, besides the loss of time involved in covering and uncovering when the Mushrooms are required for use, and no small loss, owing to the covering materials, however carefully removed, breaking them. If the shed is used for tools, or similar purposes, the Mushrooms will be liable to many accidents. If it is at the back of an early vinery, or other heated house, and the furnace doors open within the shed, I must call it a heated shed, and it may not require 9 inches of covering to maintain the desired temperature. I can hardly suppose that "R. G." advised his employer to build a shed merely for the protection of the back wall of the houses. A shed, however, must be built, even for one bed on the floor, then why not build a shed for the special purpose, and fit it up with shelves so as to have at least three beds on each side, which will produce six times the amount that beds on the same length of shed floor will do? and if no advantage can be taken of a flow or return-pipe in connection with the houses, heat it by a flue or other convenient means, and the cost of fuel for heating such a place would soon be equalled in providing material for a long bed in a cold shed during a sharp frost.

I will say nothing of the convenience of being able at a glance to look over the beds and see if all is going right, or of the interest and pleasure that many employers take in seeing them; but every one of far less experience than twenty years, who has grown Mushrooms in a covered bed, knows the difficulty of preventing the spawn from running among the covering to the injury of the future crops. I have also known instances of the covering material imparting an unpleasant flavour to the crop of Mushrooms. With every respect then for "R. G.," I would remind him of the adage, "A place for everything, and for everything a place," and the place for growing Mushrooms is in a shed with fire heat at command, whether called "a grand dungeon," or simply a Mushroom shed. Any lady or gentleman who is fond of Mushrooms will never regret the cost of a structure suitable for their growth.—G. BECKETT, *Shanbally, Cloghceen, Ireland.*

THE RAINFALL IN 1868.

AT RIDSTON-HALL GARDENS, WETHERBY, YORKSHIRE.

Inches.	Days on which rain fell.	Inches.	Days on which rain fell.
January.... 2.07	13	August 3.04	16
February... 1.38	11	September.. 2.72	8
March..... 2.10	14	October 2.77	14
April..... 1.49	6	November.. 1.74	10
May..... 1.13	9	December.. 6.85	25
June..... 0.42	3		
July..... 0.40	1	Total.... 20.11	123

The greatest fall of rain was on September 26th, 0.98 inch.
—THOS. JONES, *Gardener.*

NEW BOOK.

Baildon's Nature-Printed Ferns, prepared according to the new Patented Process by HENRY C. BAILDON. The descriptions by THOMAS MOORE, F.L.S. London: Lovell Reeve. Fol.

A SPECIMEN of the work of which the above is the title is now before us, and introduces to our notice a new mode of nature-printing, which in the details of the process appears to be of a simpler description than that practised by the late

Mr. Henry Bradbury, and having for its object the same results. As to how far Mr. Baildon has succeeded in attaining his end, there will be more than one opinion. The general outline and character of the plants illustrated in the "specimen" are perfect, and the colouring is good. In both respects the work is not in any way inferior to those issued by Mr. Bradbury, but, on the contrary, in some respects better; the want of venation in the pinnae of the fronds leaves, however, an appearance of deadness in figures that but for this deficiency would be really lifelike. In that beautifully-executed specimen of *Adiantum trapeziforme* on Plate II. this defect is very apparent. In *Platyloma rotundifolium* and *Scolopendrium vulgare lobatum*, on Plate I., it is also very noticeable; but in those like *Nephrolepis tuberosa* and *Asplenium Veitchianum*, where the pinnae are smaller, the representation is perfect. To meet the absence of venation in the large nature-printed plates, Mr. Baildon has supplied at the top of each description large woodcuts of pinnae or sections of fronds, in which the venation and fructification are carefully and minutely represented; and as these are done by Mr. Fitch, their accuracy and execution are guaranteed, and so far for all purposes of instruction everything is supplied; but we should like Mr. Baildon to try if he cannot throw a little more life into those species with large pinnae.

The letterpress is done by Mr. Moore. What more can we say? This is a subject he has made his own, and the care with which he executes all he undertakes is a guarantee that in this case the reputation of the work will not suffer in his hands.

It will make a splendid and very useful book, and when issued to the public we trust it will meet with that support which its merit deserves.

POMOLOGICAL GLEANINGS.

LORD BURGHLEY APPLE.—"R. G." referring to this fine Apple, writes that it would perhaps be of interest to our readers to know something of its history, and states that "in the fine old kitchen gardens at Burghley Park, Stamford, in which is to be found one of the best collections of Apples in the country, about thirty-five years ago it first bore fruit, being then quite a young seedling tree, growing in one of the warmest corners of the garden, but it was never much noticed. Mr. McIntosh, who was then gardener, ordered it to be removed, making the remark to an old trusty servant who is still employed in the gardens, 'I would put it in the corner of the waste ground,' which was accordingly done. For twenty-five years it there grew, flourished, and bore abundance of fruit, which, however, was never gathered, but allowed to fall and rot on the ground, until Mr. Matheson, the late very skilful gardener at Burghley, observed it, admired it, and brought it before the notice of the public." Thus we have to thank Mr. Matheson specially for introducing this really excellent winter dessert Apple. We have no doubt, as "R. G." states, that there exist in a like manner many other seedling Apples which only require to be known in order to be appreciated, and we hope to see them in course of time.

—ORD'S APPLE.—For the present season there are but few dessert Apples that can vie with this for freshness, juiciness, and richness. Some fruit which we have tasted to-day are as plump, as juicy, and as refreshing as if they had just been gathered from the tree. In appearance it is what might be called ugly; the colour green, with a dull red on the exposed side, and profusely covered with large ferruginous specks, which give it a very uninviting aspect. It is an old Apple, having been raised at Fulham about a hundred years ago, and sent out by Mr. Lee, of Hammersmith. It is just a little tender, and requires a warm season and a good situation to ripen it well, so as to bring out the full, rich, brisk, fresh flavour. It is worthy of more extended cultivation than is generally accorded to it.

THE MANGO IN AUSTRALIA.

At a meeting of the Queensland Acclimatisation Society held in Brisbane on the 16th of November, 1868, the following paper was read by one of the Vice-Presidents of the Society, Mr. Lewis A. Bernays.

"The circumstance of the Mango fruiting for the first time at Bowen Park may make interesting to members of the Acclimatisation Society a few memoranda upon the habits, uses, and value of this world-renowned eastern tree.

"The fruit of the Mango is held in high estimation in the

East; its form is that of a large drupe, somewhat flattened, otherwise not unlike in appearance to, though differing in colour from, the fruit of the Egg plant. The flavour resembles a combination of that of the Apricot and of a fine Pear, but it is rarely unaccompanied by a slight taste of turpentine. The fruit varies much in quality, according to the variety, as well as to the climate in which it is grown; it is fleshy, and more or less fibrous—the hotter descriptions being extremely rich in pulp and juice. It is considered to be a wholesome fruit when the system is used to it, but requires cautious use by those who are unaccustomed to it. The varieties differ in the form of the leaf, and in the size, shape, and flavour of the fruit. There is also considerable difference in the colour of the ripe fruit, which varies from green to yellow, and in some cases has a reddish tinge. The finer the kind the less there is of fibre and more of pulp and juice, but complete maturity is an important condition, as in that state only has the flavour of turpentine disappeared, and that only in complete degree in the best varieties. Although few of us have eaten the fresh fruit, the Mango is familiar to many as an ingredient of great excellence in Indian pickles, preserves, and chutneys. For the former of these purposes the fruit is used in a partially unripe state, but for the two latter at a more advanced stage of maturity. The seed, which consists of a hard stone, germinates freely in moist heat. The gum which exudes from the bark, and also the leaves, are used medicinally, both internally and externally, for their astringent qualities, after suitable preparation. A decoction from the seed is also said to have valuable anthelmintic properties. The root contains a bitter aromatic, employed against diarrhoea, &c. The young leaves are used as a pectoral, and the old leaves for cleansing the teeth.

"The Mango is grown in the East and West Indies, Java, Ceylon, Mauritius, and in other hot and moist climates, the best being said to be grown in Bombay. It is also common in Madeira, where, however, it is stated not to produce abundantly until the tree is ten years old. Our own experience seems to indicate that if the tree can obtain a certain degree of duration of heat, a moist climate is not essential to its healthy growth, or the maturing of the fruit. Neither does it appear to be very particular about soil. A tree fruited in the Botanic Gardens under the care of Mr. Walter Hill four years ago, while this year in the same place there are several trees showing fruit. In that locality the soil is a rich and deep scrub soil. In Bowen Park, on the other hand, the soil is sandy and poor, and the only care which has been taken has been to mulch the surface freely for retention of moisture and protection from the sun. We have trees planted in various localities in the Park, under different aspects, but they all look healthy and vigorous. The two trees which are fruiting are in their fifth year, and came into the Society's possession, among other plants in a case from the Mauritius, presented by Sir Henry Barkly."—(*Brisbane Courier*.)

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CÆLOGYNE (PLEIONE) REICHENBACHIANA (Dr. Reichenbach's Pleione). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of mountains in Arracan. Flowers pale rose, lip purple-streaked.—(*Bot. Mag.*, t. 5753.)

DELOSTOMA DENTATA (Toothed-leaved Delostoma). *Nat. ord.*, Bignoniaceæ. *Linn.*, Didynamia Angiospermia.—Native of Gualeaca, near Cuenca, in Ecuador. Flowers white, slightly rose-tinted.—(*Ibid.*, t. 5754.)

CAMPTOPUS MANNII (West African Camptopus). *Nat. ord.*, Rubiaceæ. Tribe Psychotriæ. *Linn.*, Pentandria Monogynia.—Native of Fernando Po. A singular stove shrub, with deep green, red-ribbed leaves, crimson bracts, and crimson peduncles, the latter a foot long, curving downward, and bearing a scarlet and white ball of flowers.—(*Ibid.*, t. 5755.)

ONCIDIUM XANTHONON (Golden-toothed Oncidium). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of the Cordilleras of Ecuador. Imported by Messrs. Backhouse, of York. Flowers chocolate brown, with golden, crisped, crenate edges.—(*Ibid.*, t. 5756.)

COBÆA PENDULIFLORA (Pendulous-flowered Cobæa). *Nat. ord.*, Polemoniaceæ. *Linn.*, Pentandria Monogynia.—Native, at 6000 feet elevations, of the Caracas Mountains. It is a slender glabrous climber. Corolla green, its lobes 3 or 4 inches long; filaments of stamens purple, anthers golden; style 6 inches long, green.—(*Ibid.*, t. 5757.)

CYCLAMEN AFRICANUM (Algerian Cyclamen). *Nat. ord.*, Primulaceæ. *Linn.*, Pentandria Monogynia.—The largest of the genus. Flowers white, purple at the base. Appears to be only a form of *C. neapolitanum*.—(*Ibid.*, t. 5758.)

ALLAMANDA NOBILIS.—"Of the species of *Allamanda*, which rank amongst the most gorgeous of stove climbers, this is certainly one of the finest—the noblest of all those yet known in respect to its individual flowers, and so far as experience has gone, the equal of the very best of its congeners in respect to prolificacy of blossom. It was introduced by Mr. W. Ball, of Chelsea, from the Rio Branco, in Brazil, and flowered for the first time in this country in the autumn of 1867. The flowers are of a pure bright yellow, rather deeper tinted in the throat, but without streaks or any other markings; they measure from 4 to 5 inches across, and have a decided aromatic magnolia-like perfume; they are, moreover, of a full circular outline, quite different from that of the other cultivated species, with the exception of *A. grandiflora*, from which the plant differs in its scandent habit of growth. These features, together with the membranous hairy leaves, the pubescent calyx, and pubescent exterior surface of the corolla, and, moreover, the dissimilar shape of the latter, mark it as distinct."—(*Florist and Pomologist*, 3 s., ii., 25.)

GARDENING IN TOWNS.

As a rule, Hyacinths flower best in pots when one bulb only is grown in each pot. The most useful size of pot is one 5 inches in diameter and the same in depth, or what is commonly termed a 48-sized pot. The compost should consist of good rich loam, one-third decayed leaf mould, and a little rotten dung mixed well together, with a little sand. In potting, after covering the drainage hole with a piece of broken pot, and this again with other pieces, or cinders from which the ashes have been sifted, fill the pot sufficiently with soil to receive the bulb, and place the latter with its top an inch below the rim of the pot. This done, place the compost round the bulb to within an inch of the rim, so as to allow for watering. October is the best time for planting.

Put the bulbs in a cellar or out of doors as may be convenient, and cover them with leaf mould, cocoa-nut fibre refuse, or soil, to a depth of 2 inches above the bottom of the pot. If they are in a cellar, and the soil becomes dry, give them a little water. When they have grown 2 inches bring them to the light, and place them where they are intended to bloom. Attend to watering when the soil looks dry; if they are in a very warm room they will require water every day.

If you have the convenience of a small frame, and wish to bring the Hyacinths into bloom about Christmas, make up a little hotbed, and when the heat is about the same as that of new milk put on the top some light soil, leaf mould, or cocoa-nut fibre. Plunge the pots, and keep them close, except where there is much steam, in which case insert a small wedge below the sash to let out the steam. When the bulbs have pushed from 3 to 4 inches take out the pots, wash them, and put them in the window. By this treatment you will have an early bloom.

In selecting the bulbs see that they are sound at the top and bottom, and weigh them in your hand; if they do not feel heavy do not buy them, but choose those which weigh most.

The single varieties are the most certain to bloom freely, and they produce better spikes than the double sorts if grown in glasses. To grow Hyacinths in these, put the bulbs in the glasses in September, fill the latter with water, and place them in a cupboard or some other dark place. Let the base of the bulbs just touch the water, and look at them occasionally to see if the water has evaporated to such an extent as not to touch the bulb, and if it has, fill up occasionally. If the water become dirty, carefully pour it out and fill up again. Soft water is the best to employ if you can obtain it. When the bulbs have pushed sufficiently to show the leaves, remove the glasses to the window where you wish to place the Hyacinths but do not put them on the mantel-shelf, as the heat of the fire will soon spoil them. Take them from the windows at night if the weather is frosty. If they become drawn up too much take a thin copper wire, twist it round under the rim of the glass, bend it over the top, and fasten the stem to it after cutting the wire to the height you require. This will prevent the bulb from falling out of the glass, and will keep the spike upright.

The following varieties are certain to bloom freely both in

pots and glasses—Lord Wellington, rose; Mrs. Beecher Stowe, red; Gigantea, blush; Madame Van der Hoop, white; Mont Blanc, white; Tubiflora, white; Argus, blush; Baron Von Humboldt, violet; Couronne de Cello, blue; Prince of Waterloo, white; Laurena Koeter, purple.

Tulipa may be planted in the same kind of soil as the Hyacinth, but put three in a pot, and do not allow them to draw up too high before bringing them to the light.—SAMUEL BROOME, *Temple Gardens*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

GARDENING operations may now be proceeded with in every department should the present mild weather continue and the ground not become too wet. *Asparagus*, make new beds with two-year-old plants, and fill up old beds. *Beans*, plant out Mazagan from boxes and pots; sow Longpods. *Cabbage*, plant out, and earth-up those already planted. *Cauliflowers*, plant out from frames or hand-glasses; the latter must have but three plants left under each. *Celery*, make a sowing on a warm border. *Cucumbers*, give air to the frames as frequently as possible, taking care not to let the heat decline. Sow for succession crops. *Leeks*, sow for the principal crop. *Onions*, sow main crops in drills or broadcast; weed and thin out those sown in the autumn. *Pot Herbs* should now be sown, or plantations made from cuttings. *Potatoes*, plant early sorts in a warm situation; for earlier crops a few may be planted in boxes in heat, and transplanted to the open ground when they have vegetated. Those grown in frames should have air given freely. *Savoy*s, sow for early crops.

FRUIT GARDEN.

The weather, should it continue mild, will so far advance the wall trees, that unceasing application in nailing, pruning, &c., will be rendered imperative. The necessity of affording protection to early-blooming and trained fruit trees will shortly occupy attention. The method most commonly adopted is that of tacking fir boughs over the blossom; but when time, trouble, and the waste of material are taken into consideration, it is questionable whether in the end it is not an expensive plan. The French method, which is simply a narrow straw mat rearing on rods that are commonly fixed in a slanting position under the coping of the wall, is both effectual and inexpensive. Wooden moveable copings are effective but cumbersome. I imagine glass might be employed advantageously merely as a coping. Canvas or thick woulen netting fixed to rollers and worked on rafters falling at a sharp angle from the top of the wall, although an expensive, is an assured and effectual plan of protection, the adoption of which can be recommended from experience. Clear away dead leaves from Strawberry plants, and remove superfluous runners from the Alpine Strawberry; all should not be removed, as the runners bear better generally than the old seedling plants.

FLOWER GARDEN.

Proceed with Rose-pruning. The late mild weather has already advanced the buds of many sorts; an exception, however, may be made of Roses recently moved. Plant and layer Rhododendrons. Trained Magnolias should be secured to the wall, and Pomegranates and tender shrubs uncovered. Conifers may be planted out or removed. Edgings required for flower beds, such as Box, Thrift, or Daisies, should be at once planted, and Box edgings must be cut. Plant Pinks, Pansies, and Carnations. Progress should be made with the laying of turf, and all planting and pruning completed for the present. Mild showers occasionally would be of service to Auriculas, and when grown in wooden frames a brick placed under each corner whilst the weather is open, would contribute to their health and well-doing. Some people top-dress their plants with rich and stimulating soil at this period. I do not advocate adding anything stronger than thoroughly decomposed cow manure, mixed with an equal bulk of decayed leaves; this will grow them well without running any risk of poisoning the plants. Ranunculuses may now be planted whenever the soil is sufficiently dry, planting them in rows about 6 inches apart, 4 inches from root to root, and covering with 3 inches of soil. In consequence of the mildness of the winter Chrysanthemums are growing very rapidly, rather too much so. To make them more hardy, so as to withstand the severe weather which may be expected before next May, and which will check their growth, you should now begin to dig up the roots, divide them into three or four parts, and replant after well digging the borders. If the plants have grown 6 inches long, plant their new growth

3 inches below the surface, or according as they are drawn up; this will give them strength and health, and render them more hardy. If this be not done, the frost and cold easterly winds will damage the leading shoots, and cause the plants to break at the sides, which will throw them back for three weeks in the autumn, when they should be blooming. Take off the strongest side shoots for potting, put them singly into 60-sized pots in light loam and a little sand, place them in a cold frame, and they will make fine plants for conservatories and green-houses. If a quantity of bloom is required, when they have made 7 inches' growth take out the crown to keep them short, and this will cause the laterals to break earlier, and the plant will be much stronger.

GREENHOUSE AND CONSERVATORY.

On the removal of a portion of the Camellias, as recommended last week, some room will be made for gay plants from the forcing pit or houses at work. In large establishments New Holland plants, Ericas, &c., will, of course, be taken from their proper stations to keep up a display. Where a gay small greenhouse is kept, with but little other glass to assist, much of what is termed flower-forcing has to be carried on in this structure. The flower-forcing pit, if there is one, will, of course, be regularly examined, and anything coming into blossom may be removed to make room for successional plants. Poinsettias which have done flowering should be removed to a warm growing temperature to make new wood, of which cuttings may be made. *Euphorbia jacquiniæflora*, too, may be transferred to a warm house, but not pruned. In the cool house Pelargoniums should be duly attended to as regards staking and tying out the branches, so as to induce them to form handsome specimens. They will bear repotting the moment blossom buds are formed in the terminal points. Water moderately after shifting until the pot is tolerably well filled with roots. Tender annuals, as Balsams, Cockscobs, &c., may now be sown; they succeed best in a frame on a gentle bottom heat, furnished by means of fermenting materials.

STOVE.

Orchids generally will, doubtless, now be preparing to push; fire heat should be kept sufficiently lively in the early part of the day to allow of a free circulation of air. Every leaf should be dry for an hour or so about midday, after that air may be gradually withdrawn and atmospheric moisture renewed. This treatment will suit the majority of stove plants as well as Orchids. Than Achimenes, few plants are more useful or attractive, therefore every garden of any importance should possess a good quantity of them; the dwarf bushy habit, brilliant flowers, and the length of time they continue in bloom, render them worthy of every care. They all like a stove heat, but they may also be grown without such convenience, for most of the Achimenes, and even several Gloxinias, will attain a high degree of perfection in a Cucumber frame. Achimenes look best when grown in masses. This is done by taking four plants out of small pots and planting them in a larger one, or in a pan a foot or so in diameter, with 2 or 3 inches of potsherds at the bottom to secure perfect drainage. The top as well as the bottom heat now should be raised to about 80°, keeping up a moist atmosphere, syringing frequently, and giving air at every favourable opportunity.—W. KEANE.

DOINGS OF THE LAST WEEK.

The 12th inst. was one of the wettest and most boisterous days of which we have any recollection. It was just one of those days when, whatever may be the press of out-door work, we like to find something that may be done comfortably under shelter, and in which there could be no hesitation as to whether it would or would not be as well to turn out for a little. When drenching showers occur along with intervals of sunshine, it is often advisable, if fairly set to work in-doors, to make up your mind to remain there, otherwise, in such broken weather, there is apt to be much time wasted in coming and going. Gardeners as a rule must not be afraid of a drizzle; on the other hand, some experience enables us to state that work done out of doors in heavy rain is not only very expensive, as it is rarely well done, but generally entails extra labour afterwards; whilst the men frequently soaked, insensibly to themselves become less energetic when a fine day does come. Frequent soakings are among the best means of driving everything like enthusiasm out of a man; and without this enthusiasm the best workman is apt to dwindle down into a mere look-at-the-clock man. Though the day was so wet, we turned out for a

short time, that in some new and projected work we might have the advantage of the teachings of the

Water Level.—The finest eye is easily deceived as to levels. A friend lately asked us how much the ground fell to the farther end from us of some hundred yards, whilst in reality the ground declined 30 inches to where we stood. Much as we would have liked to have saved the water which ran to waste, it is essential that from walks, roads, and lawns, surplus water should freely and quickly pass, and if arrangements can be made afterwards for using all such overflow, so much the better. The heavy rains of Friday saved us much trouble about levelling in this respect, giving us at once the level for our work, and the exact position for cesspools and drains. Many a walk and road, &c., might have been made with less expense, and have been more suitable for the assigned object, if, instead of trusting to the eye, we had noticed how water stood and moved in heavy continuous rains. The levelling-down of a high place even would often render draining unnecessary, where there is no objection to seeing the water pass freely along the surface to a proper outlet. As stated the other week, the water until lately had passed along the surface more freely than it had passed down through the soil.

As we could do little work in the kitchen garden or in the pleasure grounds, except fresh work, it may be as well to advert to some odds and ends that occupied our attention, as merely mentioning them may be useful.

Heating Pipes in a trench beneath a grated floor. In ornamental houses this plan is frequently adopted, as thus there is no trouble with doorways however numerous, and the heating pipes are kept from general view. This is so far an advantage, as in the pipes generally used there is little of the beautiful or the artistic. The disadvantage of the plan is that the heat is not so quickly diffused over the house—a disadvantage of some importance where only temporary fires in frost, &c., are required, as a portion of the heat is absorbed by what constitutes the sides of the cavity or trench. When fires are almost constantly used this heat would accumulate, but then it, too, would ultimately find its way to the atmosphere of the house. Were we heating a house in this manner again, say by pipes in a trench round the house under a grated pathway, we would have open drains across from cavity to cavity, which would cause the heated air to rise more freely, whilst the space between the cavities for pipes would also be favourably influenced. Whatever the general disadvantage as to the free radiation of heat, the placing the pipes in a walled-in cavity is sometimes an advantage in an emergency, as happened with us this winter in the only frosty weather we had. The pipes, instead of being round, are deep and narrow, say about 2½ inches wide outside measure, and 14 inches deep, and instead of being placed flat they are fixed in an upright position. From long use many of the sockets of the joints gave way, and the water ran out almost as fast as we put it in. It was of no use talking about a great outlay under the circumstances; but the walls at the sides of the trench came to our aid, for with some slates beneath the joints, and bits of bricks and tiles at the sides, we soon made the joints secure by encasing them in Portland cement, which we believe will last as long as the pipes. When a pipe threatens to leak we must repeat the easily applied remedy.

Iron-filing Joints.—The above-mentioned pipes would have been more sound if more constantly heated. Boilers as well as pipes wear out soonest when only used temporarily, or for a few months in the year. These pipes have done good service for many years, but they would have worn much better but for a simple circumstance. The joints were filled with rough yarn as a bedding, and iron filings and ammonia in the usual way; but they had not only been filled very tightly, but very full, so as to make a neat slope outside the flange, and the expansion cracked numbers of the sockets. We once observed a house where there was scarcely a sound joint from this cause. Some other houses were heated in nearly the same way at the same time, and we believe not a single joint has cracked. In this latter case the joints were left unfilled for a quarter of an inch or more. Where there is no great pressure other plans may be adopted. The plan above referred to does not leave such a nice-looking finish as bevelling off the outside of the flange; but our experience and observation prove it to be the most serviceable of the two.

Small air pipes for hot-water pipes. Something was gained in heating when the pipes were placed, not level, but on a rise however slight from the end next the boiler. This necessitated an opening there to let out the air, as a body of air pressed

tightly by a column of water becomes as impassable and impenetrable as a partition of granite. When the late Mr. Weeks, sen., gave such an impetus to heating by hot water—making one boiler heat many places on different levels, he used a small tap, or merely a wooden peg fixed firmly in a small hole at the highest point, by moving which the air escaped. We forget now whether it was to him, to the present Mr. Weeks, Mr. Gray, Mr. Ormson, or to some one else we are indebted for the far simpler, better, and ever-acting plan for preventing all accumulations of air—namely, the fixing a small pipe, as a gas pipe, at the highest point of the hot-water pipes, with the open end at a higher level than the feeding cistern, and, if deemed advisable, outside the house or pit so heated. These pipes are generally of the same soft material as is generally used for bringing the gas to the gas-burners in rooms. For this purpose nothing could answer better when all the pipe is comeatable and aboveground so as to be seen; and hardly any other precaution is necessary, except turning the open end of the pipe downwards, to prevent the entrance of dust, and keeping some kinds of bees and flies from making their nests in such openings. In all cases of bottom heat, however, where there is a bed of any sort above the bottom pipes, and an air pipe is needed, it would be advisable to have a pipe of strong iron rising as high, at any rate, as to be above the surface of the bed, whether the bed is fixed or of moveable fermenting material. In two ranges of pits thus bottom-heated, the pipes for a few days were losing water—so much so as to stop the circulation, unless water was added every few hours. We satisfied ourselves that the boiler was all right. The air pipes were cursorily examined and supposed to be right, and we were in dread that we might have to empty the pits to find the leakage. When digging down to a bottom-heating pipe we found the soft-metal air pipe corroded, and the water oozing from it, which was a pleasant discovery, as a firm wooden peg made it all right in the meantime, until we fix a stronger pipe. Even this soft pipe has lasted some years; but we would prefer stronger material when such a pipe is to be covered up. We had tried this air pipe by sucking, &c., and thought it was sound, and but for clearing the pit out and reaching the highest point of the bottom-heating pipes, we should not have found out how so easily to apply a remedy to the evil. We once knew a place pulled to pieces, when quite as simple a matter as this looked to would have saved all the labour and annoyance. Many a hot-water apparatus acts imperfectly because air accumulates at the highest point. When pipes are not on a level, the tendency to air thus accumulating will be in proportion to the warm water drawn off from the pipes and boiler, as the addition of cold water carries air with it and before it. A very small hole would allow the air to escape.

Propagating by Cuttings.—This has occupied a portion of our time, as cuttings rooted now will soon become strong plants. For all plants that frost would injure, and which, therefore, are kept under protection, the cuttings will succeed best now, with less or more of the assistance of a hotbed, so as to yield a bottom heat of from 75° to 85°, and a top heat of from 55° to 65° or 70°. The end of this month and the middle of March will generally be early enough for window gardeners to commence propagating their *Verbenas*, *Pelargoniums*, *Fuchsias*, &c. We are well aware that some of the beautiful plant cases advertised are very suitable for the purpose contemplated, as well as forming an elegant piece of furniture. In the largest of these Ferns, &c., can be grown as well in a sitting-room almost as in a plant stove, as the plants receive a considerable amount of light, and are protected by the case from the dry air of the room, especially when rendered still more unwholesome by the blaze of numerous lights, whether candles, lamps, or gas. We approve of these cases being heated by lamp, gas burner, or otherwise, but many for whom we write cannot well go to the expense of such cases, and yet are very anxious to enjoy all the pleasure of increasing the number of their pets, and doing everything for them themselves. To them the useful is more appropriate than the beautiful in design. For them nothing is more suitable than a stout wooden box, either with feet to stand upon or to be set on a table close to the window, the box to be deep enough to permit of 3½ inches at the bottom being made waterproof, a plate of iron, zinc, or tin fixed across 3 inches from the bottom, and to permit of small pots or pans being placed inside, and some 4 or 5 inches left above them for an atmosphere. A small funnel at one end, and a tap or plug at the other, will permit of warm water being poured in, and cold water withdrawn, and after fairly setting the little case going, it will rarely be necessary to remove more than

half of the cold water if boiling water is added. But a little practice will soon enable a tyro to regulate the heat to a nicety. The little tank or cistern for the water being all surrounded by wood, the heat will remain a long time uniform, if it do not escape too freely from the iron plate which covers it; and nothing is better for equalising the heat and setting the cutting pots in than clean-washed sand, to the depth of a few inches in proportion to that of the pots, as there is no necessity for setting these in the sand to their full depth. If desired, a small pipe may rise above the sand to let out warm vapour, but as being simpler, we should prefer to obtain that by keeping the sand moist when wanted. The cover for this case we would have of glass in one sheet. The simplest plan would be to have a sheet of stout glass without a frame, with a few pins in the wood to keep it in its place. The next simplest would be to have the glass in a wooden frame, so as to be moved with ease, and so that you could turn the square under-side uppermost whenever desirable, so as to avoid thus easily all trouble from the droppings of condensed moisture. A cloth covering would be advisable over the glass in cold nights. The size of these boxes may be just what is most suitable, but from 18 to 24 inches square would be very useful, and rather than have a large one we would recommend two—one heated as above; one either slightly heated, or a mere glass-covered box, in which the cuttings should be placed when struck, and gradually hardened-off to the general temperature of the room.

For such small cases, small square boxes of zinc are best for cuttings, say 3 inches square, and $2\frac{1}{2}$ to 3 inches deep. For such a purpose zinc is better than earthenware, as every plant we have tried likes it; but small common pots do very well, but without rims, as even the little spaces between the pots will be useful for setting a small fresh-potted plant. Now, for inserting the cuttings there is no quicker mode of propagating most things than placing them in shallow vessels, as saucers, in pure sand alone, and keeping that sand moist and warm. The only objection to the mode is that the cuttings when rooted will not thrive long in the sand alone, but must be moved as soon as well rooted, and they thus often experience a check similar to that received by cuttings struck and plants grown in water. To suit most of our readers who would use these cases, we would recommend a compost of about equal parts of fresh gritty loam, sand, and sweet leaf mould for a layer at the bottom of a suitably-drained vessel, and then a layer of sand on the surface, which kept damp prevents the base of the cutting from being dried up, whilst any excess of damp will be parted with freely. The great advantage of this plan is, that when the cuttings are rooted they will thrive in the compost and wait patiently a longer time until you harden them, and find it convenient to repot them singly, or two or three round the sides of a pot.

In taking the cuttings a little judgment is necessary. We all know how in such things as *Calceolarias*, *Verbenas*, &c., it is possible to make two plants of every joint, provided there is a bud on each side, and this plan may be followed when there is the desire to make the most of any one plant, and after some experience has been gained. In general practice, however, it is best to have at least two joints for a cutting, one to be cut across at, and the leaves removed, to go into the surface sand, and one to stand above with the leaves full or a little curtailed, according to the means at command for checking perspiration from the cutting. Whenever it can be done the cuttings will always succeed best if short and slipped off as side shoots from the older stem. The little bit firmer at the base is a great security against damping. When the vessels used are more than from $2\frac{1}{2}$ to 3 inches in depth, from a third to more at the bottom should be filled with drainage, the finest next the top. We like fresh moss for drainage, but not for cuttings, as the roots become interlaced in it, and are apt to be broken when many cuttings are struck in one vessel.

In all small cases we recommend the use of little pots or vessels, with the cuttings inserted all round close to the sides of the vessel, instead of larger vessels with the cuttings all over. The cuttings will thus thrive and strike, partly, no doubt, as stated in the "Science and Practice of Gardening," because there air will have better access to them without drying them; but chiefly, we believe, because the sides of the vessel act as a resisting medium to the swelling of the base of the cutting, and thus roots are sooner protruded.

We must conclude at present with a few words to the inexperienced. Bear in mind that success in such a mode of propagation greatly depends on never, or as little as possible, allowing the cutting to feel that it has been parted from its

mother plant. Keep it growing under an extra stimulus, and all will be well. Never, therefore, let a cutting wither or flag before inserting it. After watering with warm water put it in its place as soon as possible. Give it then water enough to keep it moist. Never shade during the day, unless when the sun would cause the leaves to flag. If the slight dewing of the foliage would arrest that, prefer the dewing to shading. Shade, however, with a thin cloth or paper rather than allow the foliage to droop, but remove the shade instantly when not wanted. The less shade, if the cuttings stand without it, the sooner will they root, and be robust and strong. The more heat and the more shade, the more will the tops be encouraged to lengthen weakly, even if the rooting proceeds slowly. The apparent growth in such circumstances is like the drawing-out of a wire, making it longer with the same weight of material. The less quick extension by the other mode will be accompanied by quicker rooting and robust growth. In such a case as supposed no air will be needed for a couple of days or so; but after that a very little should be given at night and taken away in the morning, as the confined atmosphere will arrest perspiration during the day. When the cuttings are growing a little air will be wanted as they can stand it, and then when well rooted they should gradually have it freely in the same place, or be removed to another place to harden to the temperature of the room.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 17.

We had a little revival of trade in the early part of last week; but all has again relapsed into dullness, and we have to notice that a large quantity of produce sent to Saturday's market remains unsold. Good sound Potatoes have slightly advanced.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	1	6	2	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	6	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currents..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert) ..doz.	4	0	8	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	8	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	9	1	0	Quinces.....doz.	0	0	0	9
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries ..quart	0	0	0	0	Strawberries.....oz.	3	0	0	0
Grapes,Hothouse..lb.	6	0	8	0	Walnuts.....bush.	10	0	15	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	2	0	4	0
Beans, Kidney ..hd.	2	0	3	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,pinnet	0	2	0	3
Broccoli.....bunch	1	0	2	0	Onions.....bushel	6	0	8	0
Brus. Sprouts $\frac{1}{2}$ sieve	3	0	3	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	0	0	0	8
Carrots.....bunch	0	4	0	8	Potatoes.....bushel	4	6	0	0
Cauliflower.....doz.	2	6	4	0	Kidney.....do.	4	0	7	0
Celery.....bunch	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	2	0	4	0	Rhubarb.....bunch	0	9	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish ..bunch	3	0	5	0	Turnips.....bunch	0	6	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

VARIOUS (Inquirer).—M. Jamin's volume has not been translated into English. We do not remember the advertisement you allude to, but any small-meshed wire netting might be cut and bent to answer the purpose. The different kinds of Apple stocks are now undergoing investigation.

WIREWORM IN VINE BORDERS (Vine-grower).—We do not know of any application that will destroy wireworm; but sprinkling the border with soot will drive it away, and the soot is a manure of the best description. By placing a number of potatoes or pieces of carrot in the border, covering them with soil, and examining them frequently, you will be enabled to destroy vast numbers of wireworms. We have not suffered from wireworm attacking the roots of Vines, and cannot say whether it will attack them or no, but we think not.

POLYANTHUSES (H. H.—L. D.).—There is no florists' flower with which less has been done of late years than the Polyanthus, and the varieties which used to win prizes "when we were young," are still the best to be

had. A few persons (among them Mr. Wiggins, of Isleworth), are endeavouring to raise new ones, and figures of two of his seedlings appeared in the "Floral Magazine" last year. "Good Graciosa" we know nothing of now, nor did we think a great deal of it when poor Beaton was so enraptured with it. The best growers do not care to part with their best seed.

GRAFTING VINES (R. M. W., Sheffield).—There is no advantage in grafting Mrs. Pince's Black Hamburgh on the Black Lombardy, except obtaining a good variety in place of one that is later and requires a higher temperature. It is impossible to foretell the effect on the fruit of grafting a Vine. We shall be obliged by a report of your experiments and the results.

CHEDDAN PINK (T. J. W.).—We do not know where you can obtain seeds of this (*Dianthus casius*). Messrs. Backhouse, of York, we know have plants of it.

ROSS'S EARLY POTATOES (A Lover of Potatoes).—We cannot tell where you can obtain them. Any dealer who has a stock of the most approved varieties would find it compensatory to advertise them and their prices.

POTTY (J. D.).—As it may be bought for about 10s. per cwt., it is not worth the time required for making and spoiling. We cannot enter into details of paint-making.

DEALS—TURF ERODING (A. B.).—The red deal is the wood of *Pinus sylvestris*, or Scotch Fir. The white deal is the wood of *Abies excelsa*, or Norway Spruce. There is no special height for a turf verge; it looks best if sloping to a feather-edge next the gravel.

THORN DYING (C. Ellis).—It is impossible to say without more information why the Thorn died. It is quite certain that budding the double varieties upon it did not kill it, for it is the common and successful mode of propagating them. Judging from the roots we should say that the soil is too dry. The *Syringa* (we presume you mean a *Philadelphus*), having at one time produced fragrant flowers, but now scentless flowers, is, of course, if true. There is one species which never has fragrant flowers, *Philadelphus inodorus*.

CAMELLIAS (J. K.).—We cannot say who grows them most extensively. Any of the leading nurserymen who advertise in our columns could supply what you need.

ALLOTMENT FARMING (C. E. Prichard).—If you enclose five postage stamps with your address, and order "Allotment Farming for the Many," we will send you a little work on the subject.

SALT AND LIME AS A MANURE (J. B. C.).—Salt has not the slightest power to fix the ammonia in farmyard manure; nor is it of any more use to mix it with the manure than to apply them separately to the land. If the lime is put on to destroy slugs let it remain on the surface; if to improve the staple, plough it in. If you enclose five postage stamps with your address, and order "Manures," you will have a little book sent by post which will afford you much information.

EVERGREEN TREES FOR SHELTER TO ORCHARD (Deodar).—The belt should not be less than six rows deep, the first row Holly and Yew alternately, the next row *Pinus austriaca* and Hemlock Spruce, the third row the same as the first, and so on to the back. The rows should be 4 feet apart, and allow the same distance from plant to plant in the rows, planting them in quincunx order. If the situation is much exposed you should have double the number of *Pinus austriaca*, having the first or outside line Yew and Holly, the second line Austrian Pine, the third Austrian Pine, alternately with Hemlock Spruce, the fourth Austrian Pine, the fifth Austrian Pine and Hemlock Spruce, and the sixth Austrian Pine and Yew, all 4 feet apart.

BULBS GROWN IN POTS AND GLASSES (F. L.).—The bulbs grown in pots and glasses this year will not be suitable for the same purpose next year, but if planted out in the flower borders they will do tolerably well, and are very useful and desirable in such positions. They may be planted in the border when danger from frost is past.

HEATH AND EPACRIS TREATMENT (Anxious to Learn).—Heaths require a somewhat more airy and drier atmosphere than Epacris, and they are less accommodating than the latter, which may be grown tolerably well in a mixed collection of greenhouse plants; they are likewise more easily kept in order, and bear cutting well, which Heaths do not. Epacris should be cut down after flowering, but Heaths should not, and beyond these differences Heaths and Epacris succeed well together, and there is no material difference between the two as regards soil, temperature, or general treatment.

IRON VERSUS WOOD FOR TRAINING APPLE TREES (Idem).—We do not think either objectionable, only wood is not so neat and durable as galvanised iron wire. Wood is somewhat cheaper as regards first cost, but dearer in the end. Apple trees succeed well trained to either wood or iron, but the latter should be galvanised or well painted.

CELERY, TOMATOES, AND LORELIA IN A GREENHOUSE (H. Sandown).—You may raise plants in a greenhouse, sowing the seeds early in March, and placing them in the warmest part of the house until the seedlings appear, and then in a position near the glass so that they may not be drawn-up weakly. You may set the seed-pans on the flue if it be never more than warm, but they must be placed near the glass as soon as the plants are up, otherwise the latter will be drawn-up and worthless. Admit air moderately. The temperature need not exceed 50° at night, and may be from 10 to 15° higher in the day, and higher with sun and abundance of air.

WATERING STRAWBERRIES IN POTS (Idem).—The plants should be kept well supplied with water, and manure water given at every alternate watering, but it must not be strong, 1 oz. of guano to the gallon of water is quite strong enough, and the drainings of the dunghill should be diluted with six times the volume of water.

VERONICA SEED SOWING (Idem).—You do not state what the variety is. If one of the half-hardy or greenhouse kinds, it should be sown in March in a hotbed, or in the greenhouse; whilst the hardy kinds may be sown out of doors in the first week in April.

POTTING LYCOPODIUMS (Idem).—The best time to repot them is in the middle of March, keeping them close and moist until they have recovered.

PASSIFLORAS NOT FLOWERING (W. G.).—We think your *Passifloras* will flower this year, if you now thin-out the shoots, and shorten those which are well ripened to within a few joints of their base, leaving a sufficient number of shoots for the extension of the plants. Their not flowering is,

perhaps, owing to their having too much border-room. They flower best when the roots are confined. Keep them dry in winter. The pruning should be performed much in the same manner as *Vitis* pruning, some of the shoots being cut-in as spurs, and others left as rods, shortening the latter so as to remove the unripe wood, and leaving them of various lengths. *Passiflora Imperatrice Eugénie* succeeds in a conservatory where the temperature is not often lower than 50° at night, though it may fall to 40° at night in severe periods. It will be likely to meet your requirements.

LAPAGERIA ROSEA HARDINESS (W. G.).—We have before heard of the *Lapageria* getting frozen, and succeeding afterwards, but we were not furnished with any further data to warrant the conclusion that it is hardy. We should be obliged for information on the subject.

ECCHARIS AMAZONICA (A Subscriber of Many Years Standing).—The foliage is, no doubt, decaying from the cold and damp of the greenhouse, which is much too cold for it. It ought to have a light airy position to the stove, or a house having a temperature of not less than 50° at night, not giving more water than enough to keep the foliage from flagging. The plant ought to be kept under rather than overpotted, and we would not divide it. Our correspondent has a very fine plant, but cannot get it to flower. Will any of our correspondents favour us with a successful mode of treatment to insure flowering?

HYACINTHS WITH TWO AND THREE SPIKES (Idem).—It is not unusual for *Hyacinths* to throw up two spikes, and especially the large bulbs. No doubt the late hot dry season would be favourable to the maturation of the growth, and to that, in a measure, the throwing-up of double spikes may be attributed. It is more than usually common this season. The only way to escape double spikes is to select medium-sized bulbs, firm, close, and heavy for their size, avoiding those that are large, not firm, have the scales open or loose, and are light.

GLAZING (C. B. G.).—There need be no difficulty as to water-tightness, in glazing without laps, placing glass edge to edge in one plane, provided the glass is nicely cut; but unless you infringe on the principle of a patent, there will be a danger of the glass breaking by expansion and contraction, unless you have means for that being done at the ends, and firm puttying will hardly allow of that. The cracking and breaking is the only drawback in such circumstances, unless prevented by some such simple means as Beard's Patent.

STRAWBERRY CULTURE (R. U.).—If you enclose five postage stamps with your address, and order "Fruit Gardening for the Many," you will have it sent post free from this office. It contains what you require; and you will see what Mr. Radclyffe says in our Journal next week.

TAKING UP CROCUSES AND SNOWDROPS (P. Q.).—When Crocuses and Snowdrops are used as edgings, they will be little in the way of bedding plants, as the leaves will soon ripen and be removed, whilst the bulbs or corms may remain. When very bulky we have tied the leaves in little bundles until they became yellow. When beds are filled, and these beds are to be fresh stirred and planted with bedding plants, the best plan is to take up the bulbs with balls and plant them in a bed or turp, watering, shading a little for a few days, and then exposing them to the sun and light until they are ripe. We have frequently allowed them to remain in such a bed until the autumn, and raised and planted them again in patches. If you prefer taking-up the bulbs and keeping them dry you may do so. Snowdrops are less likely to suffer from being moved from the beds than Crocuses. We have seen Crocuses do well as edgings and in the corners of beds for many years, merely removing the foliage when ripe and withered. We would not give them manure water after taking them up and replanting them.

WOVE COVERING FOR PLANT HOUSE (Yorkshire Subscriber).—We have never had faith enough in tiffany, linen, or cotton, to roof with it a plant house to be used in winter; but for spring and summer such coverings are very useful. We have tried tiffany, but unless tightly stretched it lets the water through, and, as you say, the colour soon becomes dark and disagreeable. We have tried linen for covering earth-pits, &c., but it is apt to become brittle, more brittle than cotton. What we would prefer would be a medium texture of unbleached cotton, as that wears well and soon becomes white enough from exposure. For a permanent roof we would have it stretched tightly; and in tacking with tape, &c., we would run a brush with boiled oil and a little beeswax over the tape, or just a little white paint. For the covering, as a whole, provided light is to be admitted, we would rather use no preparation whatever. We have soaked and painted with various highly-recommended mixtures for ensuring lasting wear, but, on the whole, we have found the cloth that had no preparation lasted as long as that which was prepared. We fear that for a house at all lofty, such a covering would only last a short time if left on all the year, and frequent renewals become expensive. If used as sashes in the spring and summer months, and carefully dried before being put away, it will last three or four times longer. The talk that was made about calico houses was when glass was from four to six times as expensive as it is now. Very tolerable glass in large squares can now be had from 1½d. per foot, and when a fixed roof is used, the wood, in the shape of light rafters only, does not cost much. Taking the above altogether, we would advise you to make the most of your old cloth, and invest in a cheap orchard house. We shall be glad if others more conversant with calico houses will state the results of their experience with them. Some of our enthusiastic Tulip and *Hyacinth* growers out of doors, may be able to give information as to how long a calico-covered house will last.

FILBERT TREES BY THE SIDE OF A STREAM (A Subscriber).—Although it would have been better had your trees been on a dry stony bank facing the south, yet as it is not so, we do not despair of your succeeding, if the soil is not too stiff, as the sides of a stream are not necessarily wet, but if they are so, we hardly think you will succeed. If the soil is stiff give it a good dressing of lime, burnt clay, or anything likely to loosen the texture, and be sure that all superfluous water is well drained away. The mere fact of a site being once or twice overflowed with water, which some plots by the sides of streams are liable to, is not so detrimental as stagnant water remaining lodged in the soil all the season, the former drains away with the subsidence of the flood, and the soil of such level tracts is usually porous and good, favouring the growth of many plants, although not so well adapted to the Filbert as a dry stony bank.

HYACINTHS IN GLASSES AFTER FLOWERING (S. A. K.).—The leaves and roots ought not to be cut off after the blooming is over, but the plants should be planted out in rich rather light soil in a warm situation, and

so that the bulbs will be entirely covered with soil, but not deeper than a couple of inches. The bulbs will not be suitable for growing again in water, but are very pretty for borders.

FERN FRONDS BROWNED (Anxious).—We think the fronds of your *Adiantum* are browned in consequence of water condensing on them, but it is usual for them to be in such a condition at the present season. The browning may have been caused by a chill, the fronds being wet at the time. The fresh growths will soon restore the plant to its former appearance.

REPORTING TREE CARNATIONS (O. W. D.).—It would be well to report the plants now, disrooting them or removing as much of the old soil as possible, and replacing them in the same size of pot as before. Keep them in a frame or cool greenhouse, and rather close and shaded for a few days until they are re-established, then afford an abundance of air and light. When the roots reach the sides of the pots, shift the plants into pots a size larger, or from 6-inch into 8-inch, and from 7-inch into 9-inch pots. You may plant them out if you wish for smaller plants, otherwise old plants bloom more freely than young ones. The cuttings struck last autumn should be repotted and encouraged, picking off any flower stems if they appear, and the plants will be excellent for flowering next winter and spring.

INDIA-RUBBER PLANT LOSING ITS FOLIAGE (Idem).—The loss of foliage is no doubt owing to the plant having been kept in a room. Keep it in the greenhouse, rather dry, until it begins to grow, then give the warmest position, and encourage it with a moist atmosphere. If you can accommodate it with a mild bottom heat of from 70° to 75° do so, plunging the pot to the rim.

SELECT HALF-HARDY SUB-TROPICAL PLANTS (Likes).—*Acanthus latifolius*; *Arundo donax* variegata; *Canna*; *Annel*, orange, discolor floribunda, *gigantea* major, *grandiflora* floribunda, *metallica*, *muscaria*, *Warscewiczoides* *grandiflora*, and *zebrina*; *Ferdinanda* *emmens*, *Melanthus* *major*, *Polynia* *gratia*, *Solanum* *marginatum*, *Wigandia* *caracasana*, *Phormium* *tenax* and its variegated variety, *Musa* *ensete*, *Zea* *japonica* *variegata*, *Cineraria* *platyfolia*, *Andropogon* *bombeyensis*, and *Acacia* *lophantha*. We purpose shortly to give a descriptive list of the sub-tropical and ornamental-foliage plants that may be raised from seed. The plants may be procured through any of the principal nurserymen advertising in our columns. There is not any small manual on sub-tropical gardening.

EVERGREEN HONEYSECKLE FLOWERING (Celia).—It is unusual for this to flower now, but we have known similar instances. The flowering is a result of last year's great heat and dryness, and the mildness of the winter.

SHOOTS OF PRUNUS SINENSIS DYING OFF (G. G.).—We are unable to account for the sudden withering of the shoots that are about to flower. It is probably due to gum or canker, but we could not say unless we saw a specimen.

CITRON CULTURE (Idem).—The shoots ought not to be stopped, unless they have a tendency to grow straggling, when they may be stopped to induce compact growth; but this must be done sparingly, as all the Citron family produce their flowers and fruit from the upper eyes of last year's growth. The best time to prune them is now, or before they begin to grow, cutting out the very weak shoots and such as cross each other, so as to form an open but compact head, and better foliage and fruit. They do not fruit and flower better when grown in small pots, though for decorative purposes such may be desirable. In the latter case they should be repotted every year in February, or before they begin to grow, removing as much of the old soil as can be done without injuring the roots. Provide good drainage, repot in the same size of pots, and plunge these in a hotbed or give a slight increase of heat, also a moist atmosphere, so as to encourage speedy root action. To support the foliage and fruit, manure water and a top-dressing of cow dung must be liberally furnished. The plants would be all the better of not being allowed to flower or fruit; they would grow more, and make more handsome plants in a shorter time than if they were dwarfed by fruiting.

TEMPERATURE OF CONSERVATORY (Reader).—Azaleas and Camellias will endure a temperature of 10° below freezing without injury, but the plants must be planted out or the pots protected from frost as you propose, for their roots suffer if frozen, and the foliage will also suffer unless the atmosphere is dry, and the plants accustomed to cold from a free admission of air for some time previous. Pelargoniums, Fuchsias, and Gloxinias will not endure frost; the temperature must be kept from falling below 35°, and it need not exceed 45° from fire heat for the first two; but for the Gloxinia a temperature of 45° is desirable, as it is

properly a stove plant, though succeeding in a moderate temperature if kept dry.

PROPAGATING PIR (A Monthly Subscriber).—Of the turf and brick pits we should prefer the latter, and it should be filled with the horse dung and tree leaves well mixed together, thrown into a heap to heat about a fortnight before being put in the pit, and the heap turned over after it has lain a week; then put the materials into the pit, beating and treading them down firmly until level with the top of the pit, allowing just room for the lights. In a week the heat will be strong enough, and you may then level the surface, and if the dung and leaves have sunk, add more, so as to bring the bed to within 6 inches of the glass, and 6 inches may be of old tan, sawdust, or other material for plunging the pots in. The heating material will slink to allow room for the cuttings. We do not think you will suffer from damp; but if you do, admit a little air at the back of the pit by tilting the lights.

PRUNING THE PANKEIAN ROSE (Idem).—In pruning remove the old and long bare shoots, train in the best of the young shoots, shorten them a little but not much, and keep them moderately thin. This Rose, however, should not be hard-pruned; regulation would be a better term than pruning.

APPLE AND PEAR-TREE SHOOTS (Idem).—The proper distances of the principal shoots or branches are 1 foot, not more, nor less than 9 inches, but the nearer 1 foot the better.

LILIUM ATRATUM SEED SOWING (A. A.).—The seed should be sown early in March in a pot or pan well drained and filled to within about half an inch of the rim with a compost of two parts fibrous loam, and one part sandy fibrous peat, with about one-sixth of silver sand intermixed. Scatter the seeds rather thickly over the surface, and cover with fine soil equal in thickness to that of the seed. Give a gentle watering and place the pot in a hotbed, where there is a bottom heat of 70°, or, failing a hotbed, place it in a house with a gentle heat. When the seedlings are well up, place them off and remove them to the greenhouse, placing them in an airy situation well exposed to the light, and keeping them well supplied with water. In autumn they may be potted off. The blooming plant ought to have been repotted in October; but as this has been neglected the drainage of the pot should be looked to, the old soil removed as far as practicable without injury to the roots, and fresh soil added.

MANURE WATER FOR ORANGE TREES (Idem).—You may water the Orange trees now showing for bloom and bearing green fruit, with guano water at every alternate watering, 1 oz. of guano being dissolved in a gallon of rain water, and strained before use.

SOWING GRASS SEEDS (Idem).—It is too early to sow Grass seeds, though it may be done, but they are best sown at the beginning of April, when the ground is dry, rolling well afterwards, and if rain fall soon afterwards all the better—indeed, they should be sown when there is a prospect of rain soon falling.

STARTING ORCHIDS IN TUBS (A Gardener, Broomfield).—Mr. Joy's Vines are started about the beginning of the new year.

TRICOLOR, &c., PELARGONIUM SEEDLINGS NOT SHOWING VARIATION THE FIRST YEAR (C. C.).—Many of these will very likely throw out variegated shoots during the present year. You cannot do better than plant them out, and when any show signs of variegation pinch the green portions away, so that the variegated portion may predominate. *Valloia purpurea* is worth about 30s. per hundred, such bulbs as you describe.

CHERRY PLEM (C. H.).—It is the *Prunus myrobalana*.

PEACH-TREE CULTURE (Rev. H. N. O.).—We cannot answer about the republication. On the diseases will appear in due course.

PRUNING WALL ROSES (H. E., Ealing).—"The season has been abnormally mild, and wall Roses are remarkably forward. Leave them as they are for the present, and in due time cut out all the wood that is damaged, and thin-out needless wood. Quicists should say whether their Roses are on the Briar or on the Manetti stock.—W. F. RADCLIFFE."

PRUNING ROSES (Anxiety, and Buz).—"If the Roses are on Briar stocks as standards, I would prune at once. If frost cut off any young shoot the side eyes will break. When they have started, stop one and let the other grow. Leave the most vigorous-looking shoot.—W. F. RADCLIFFE."

NAMES OF PLANTS (Rosini—M. H.).—We cannot name plants from leaves only. (*Sarah Clark*).—*Clematis flammula*. (*Bellegarde*).—1, *Daphne mezereum*; 2, *Notholaena chrysophylla* (often known as *Cincinnati flavens*). (*Bishopstoke*).—Your *Epidendrum* appears to be *E. Hanbrii*, Lindl. (*Sophia*).—*Dendrobium nobilis*. Be so good as to send another specimen of the Fuchsia. (*W. A.*).—Apparently *Eupatorium glandulosum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 16th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 10	29.854	29.842	55	42	49	48	S.W.	.02	Overcast; very fine, but cold wind; densely overcast, rain.
Thurs. 11	30.007	29.957	57	40	50	48	W.	.52	Cloudy; densely overcast; heavy rain.
Fri... 12	29.954	29.558	53	25	49	48	S.	.26	Rain; heavy rain; exceedingly boisterous at 5 P.M.; fine.
Sat... 13	30.263	30.159	50	34	46	47	N.	.00	Sharp frost, fine; very fine; fine and clear.
Sun... 14	30.235	30.181	51	45	47	46	S.W.	.00	Overcast; densely overcast; fine at night.
Mon... 15	30.299	30.204	49	44	48	46	W.	.00	Densely overcast; overcast; cloudy.
Tues.. 16	30.049	29.841	53	44	48	46	S.W.	.00	Densely overcast; fine, overcast; cloudy.
Mean	30.095	29.949	52.43	39.14	48.14	47.00	--	0.80	

POULTRY, BEE, AND PIGEON CHRONICLE.

DELAY IN FORWARDING CATALOGUES, &c.

MR. H. DOWSETT complains of the Bristol Show catalogues not having been promptly posted, and of the birds claimed not

having been properly reported. Allow me space to say that all catalogues legibly ordered and paid for previously to the opening of the Show, together with those orders received on the first day of the show, were posted on the 2nd of January, the first day of opening, and thenceforth each day's orders (the same conditions being observed), were posted each night before

I went to roost, which I admit, from the nature of my duties, was very late. If gentlemen will not take the trouble to write their names and addresses so as to be sufficiently legible for an extra clerk, a stranger to the names, to copy them correctly, such gentlemen must take the consequences.

As regards reporting birds claimed, I confess there is room for improvement, and I for one will do my best to improve; and to enable me to carry out this resolve, I will ask exhibitors to support me by not writing long frivolous letters of two or three pages which could be expressed in a few words, but to write clearly, briefly, to the point, and then half the Secretary's time would be saved, the press of work would be much lighter, and his real duties better attended to.—W. Rouk, *Secretary of Bristol Show.*

PENRITH POULTRY SHOW.

ALTHOUGH it was the first meeting of the kind that had ever taken place at Penrith, that held on the 11th and 12th inst. was of unusual excellence, and more than five hundred pens of excellent quality were exhibited. The attendance of visitors, from the attractions of the Show and the fineness of the weather, was very good.

The *Game* classes throughout were especially good, the Brown Reds being, perhaps, the most praiseworthy classes. *Hamburgs*, as might be expected, were first-rate, and the competition in many of these classes was remarkably close. *Dorkings* were generally good, and some remarkably so. In *Cochins*, the Buffs and Whites were the most successfully shown. The Black Spanish was one of the best represented classes in the whole Show. The Selling class alone contained forty-one pens, and among them were many bargains, the limited price being 30s. The show of *Pigeons* was peculiarly good, and as to *Turkeys* and *Geese*, none could wish better.

GAME (Whites and Piles).—1 and 3, J. Brough, Carlisle. 2, H. Thompson, Maiden Hill.

GAME (Black-breasted and other Reds).—1, L. Biney, Manchester. 2, C. W. Brierley, Middleton. 3, Joseph Brough, Carlisle. *hc*, J. Gelderd, Kendal; H. M. Julian, Hull; Graham & Robinson, Kendal; J. H. Wilson, St. Bees. *c*, J. Brough. *Chickens*.—1, H. M. Julian. 2, J. Brough. 3, J. H. Wilson. *hc*, P. Hodgson, Lazonby; G. Bell, Wigton; C. W. Brierley, *c*, Joseph Brough.

GAME (Any other variety).—1, H. M. Julian. 2, W. Bearpark, Ainderby Steeple. 3, W. Watson, Cocklake. *hc*, W. Dalton & J. Rontledge, Faugh, near Great Corby, Carlisle; C. W. Brierley.

HAMBURGS (Silver-spangled).—1 and 2, H. Beldon, Goitstock. 3, H. Pickles, jun., Earby. *hc*, S. Moore, Abbey Town; J. Nicholson, jun., Carlisle.

HAMBURGS (Golden-spangled).—1 and 3, H. Beldon. 2, J. Walker, Knaresborough. *hc*, W. Bearpark. *c*, Mrs. Rae, Forest Hill.

HAMBURGS (Silver-pencilled).—1 and 2, H. Beldon. 3, H. Pickles, jun. *hc*, W. Moore, Mano.

HAMBURGS (Golden-pencilled).—1, J. Walker. 2 and 3, H. Beldon. *hc*, H. Pickles, jun.

DORKINGS (Silver-Grey).—1, J. Shorthose, Newcastle-on-Tyne. 2, R. Smalley, Lancaster. 3, J. Gadder, Carlisle.

DORKINGS (Coloured).—1, Gunson & Jefferson, Whitehaven. 2, J. White, Warlaby. 3, W. W. Rutledge, Storth End, Kendal. *hc*, R. Reed, Moat. *Chickens*.—1, J. Shorthose. 2, J. Wilson. 3, E. Armitage, Kendal. *hc*, W. W. Rutledge; J. Shorthose. *c*, G. Andley, Wetheral Abbey, Cumberland; J. Fox, St. Bees.

Pen 344 (Gunson & Jefferson, Whitehaven), "disqualified, old birds." **COCHIN-CHINA** (Cinnamon and Buff).—1, J. Shorthose. 2, C. W. Brierley. 3, Mrs. Welkin. *hc*, Bowman & Fearon; G. H. Proctor, Durham. *c*, J. H. Dawes, Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—1, — Pease, Darlington. 2, C. W. Brierley. 3, J. Stephens, Walsall. *hc*, E. A. Aglionby, Hawkhead.

COCHIN-CHINA (White).—1, R. Smalley. 2, Gunson & Jefferson. 3, J. H. Wilson. *hc*, Bowman & Fearon.

SPANISH (Black).—1 and 2, H. Beldon. 3, J. Stephens. *hc*, H. Willinson, Earby; R. Reed, Moat; J. P. Harrison, Kendal. *c*, R. Bradley, Lowther.

BRAHMA POOTRAS.—1, E. Leech, Rochdale. 2, C. Layland, Warrington. 3, J. Shorthose. *hc*, C. W. Brierley. *c*, T. W. Dickinson.

ANY OTHER VARIETY EXCEPT BANTAMS.—1, Mason & Walker, Denton. 2, Mrs. Welkin. 3, H. Beldon. *hc*, C. Bower, Bolton-le-Sands; Mrs. Welkin. *c*, Walker, Boroughbridge; F. Wilson, Kendal; H. Beldon.

SELLING CLASS.—1, J. H. Wilson. 2, Gunson & Jefferson. 3, J. Brough (Black-Red Game). *hc*, Gunson & Jefferson; H. Beldon. *c*, J. Nicholson, jun., Carlisle; R. Smalley; J. J. Walker, Kendal.

SINGLE COCHINS.—1, Bowman & Fearon. 2, J. Brough. 3, J. Bell, jun., Penrith. *Cockerels*.—1, J. Brough. 2, C. W. Brierley. 3, J. Brough, Kendal. *hc*, H. Thompson. *Game Bantams*.—1, L. Biney. 2, Bowman & Fearon. 3, J. Gelderd.

GAME BANTAMS (Black-breasted and other Reds).—1, W. Barnes, Blennerhasset. 2, W. Hodgson, Darlington. 3, J. R. Robinson, Sunderland. *hc*, T. F. Fenwick, Kirby Lonsdale; Bowman & Fearon; E. A. Aglionby, Hawkhead; J. Wallis, Eaton. *c*, C. R. Saunders, Penrith; G. Carter, Bedale.

GAME BANTAMS (Any other variety).—1, W. Hodgson. 2, J. Hall, Kirby Stephen. 3, Ormrod & Billingham, Burnley.

BANTAMS (Any other variety except Game).—1, S. & R. Ashton, Mottram. 2, S. H. Stott, Rochdale. 3, J. R. Robinson, Sunderland. *c*, R. C. Musgrave, Eden Hall (Sebright Bantam); T. C. Harrison, Hull.

DUCKS (Aylesbury).—1, Mrs. J. Birkett, Ainstable. 2, A. Fulton, Milnthorpe. 3, J. Davidson, Penrith.

DUCKS (Rouen).—1, J. J. Waller. 2, Gunson & Jefferson. 3, E. Carties, Penrith. *hc*, T. Taylor, Kendal. *c*, R. Rowlinson, Kendal.

DUCKS (Any other variety).—1 and 2, T. C. Harrison. 3 and *hc*, C. W. Brierley. *c*, W. H. Parkin, jun., Raven Cragg (Wild).

LOCAL CLASSES.

GAME (Any variety).—*Chickens*.—1, J. Barrow. 2, J. Brough. 3, J. Nelson. *c*, J. Gadder, Carlisle; Graham & Robinson.

SPANISH (Black).—*Chickens*.—1, Bowman & Fearon. 2, F. M. Maclean, Lazonby Hall. 3, W. G. Parkinson, Kendal. *c*, I. Wilson, Penrith.

DORKINGS (Any variety).—*Chickens*.—1, R. C. Musgrave. 2, Gunson and Jefferson. 3, J. Nicholson, Kirbythorpe.

ANY OTHER VARIETY.—*Chickens*.—1 and 3, S. Sherwen, Whitehaven. 2, Mrs. Welkin, Bootle, Cumberland.

Pen 344 (Bowman & Fearon, Whitehaven) "trimmed out."

DUCKS (Any variety).—1, R. Bontie. 2, W. J. Dixon, Whitehaven. 3, Bowman & Fearon.

GESE.—1, Mrs. J. Birkett. 2, R. Rawlinson, Kendal. *hc*, Mrs. Rae; C. W. Wilson, Oxenholme.

TURKEYS.—1 and 2, J. Fox. *hc*, C. W. Wilson. *c*, W. Richardson; R. Thompson, Inglewood Bank; H. N. Fraser, Hay Close.

PIGEONS.

CARRIERS.—1, J. Thompson, Bingley. 2, J. & W. Towerson, Egremont. *hc*, J. Sibson, Carlisle; S. Sherwen; F. J. Leach, Middleborough.

POUTERS.—1, F. J. Leach. 2, J. & W. Towerson. *hc*, Thompson and Saunders; H. Beldon.

RUNTS.—1, H. Yardley, Birmingham. 2, Thompson & Saunders. *hc*, Thompson & Saunders.

JACOBS.—1, 2, and *hc*, Thompson & Saunders. *c*, H. Beldon; F. J. Leach.

FANTAILS.—1, Thompson & Saunders. 2, J. Sibson. *hc*, Thompson and Saunders; F. Graham, Birmingham; H. Yardley; R. Scott, Penrith.

TRUMPETERS.—1, J. Sibson. 2, J. Thompson. *hc*, Thompson & Saunders.

OWLS.—1 and 2, F. Graham, Birkenhead. *hc*, Thompson & Saunders; F. Graham; J. & W. Towerson; H. Beldon.

NGNS.—1, F. Graham. 2, R. Paterson. *hc*, R. Paterson, Melrose; H. Beldon; F. J. Leach.

TURRITS.—1, J. & W. Towerson. 2, Thompson & Saunders. *hc*, Thompson & Saunders; F. Graham; H. Yardley; F. J. Leach.

BARNS.—1, H. Yardley. 2, W. Jackson, Bolton. *hc* and *c*, Thompson and Saunders. *hc*, R. Scott.

TUMBLERS (Almond).—1, F. J. Leach. 2, F. Graham, Birkenhead. *hc*, Thompson & Saunders.

BEARDS (Baldpates).—1, F. Graham. 2 and *hc*, F. J. Leach.

ANY OTHER NEW OR DISTINCT VARIETY.—1 and Extra 2, H. Yardley. 2, Thompson & Saunders. *hc*, Thompson & Saunders; T. H. Yrean, Anfield; J. Thomson. *c*, F. Graham; F. J. Leach.

SELLING CLASS.—1 and 2, T. H. Yrean. *hc*, Thompson & Saunders; H. Yardley; T. H. Yrean; F. J. Leach. *c*, Thompson & Saunders; T. H. Yrean.

JUNCE.—E. Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham.

ULVERSTON POULTRY SHOW.

THIS was held in the Temperance Hall, Ulverston, on the 10th and 11th inst. There were upwards of 350 entries of Poultry and Canaries. The following is the prize list:—

GAME (Any colour).—*Cock*.—1, Cup, C. W. Brierley, Middleton. 2, Cup, J. H. Wilson, St. Bees. 3, W. Johnstone, Idle. 4, and *hc*, J. Fletcher, Stoneclough. *c*, T. Robinson, Ulverston. *Pullets*.—1, W. Boulton, Parkhouse. 2, E. Swainson. 3, L. Casson. *hc*, J. H. Wilson; J. Wilson, Whitehaven; T. Mason; J. Poole.

GAME (Black-breasted Reds).—*Cockerels*.—1, Cup, J. Poole, Ulverston. 2, J. Fletcher. 3, C. W. Brierley. *hc*, W. Myers, Ulverston; J. H. Wilson.

GAME (Brown-breasted Reds).—*Cockerels*.—1, J. Hodgson, Whittington. 2, J. H. Wilson. 3, C. W. Brierley. *hc*, J. Hodgson, Ulverston; L. Casson, Ulverston; T. Mason, Green Ayrs, Lancaster; J. Fletcher; *c*, E. Swainson, Nibthwaite; J. Poole.

GAME (Black-breasted and other Red).—Cup, C. W. Brierley. 2, J. H. Wilson. 3, J. Fletcher. *hc*, J. Poole; J. Fletcher.

GAME (Duckwings and other Greys and Blues).—1, H. M. Julian, Whitefriargate, Hull. 2, C. W. Brierley. 3, L. Casson. *c*, W. A. J. Fenwick, Kirby Lonsdale; J. Poole.

GAME (Any other variety).—1, C. W. Brierley. 2, J. Fletcher. 3, T. West, St. Ann's, Eccleston. *c*, J. Poole.

SPANISH (Black).—1, H. Beldon, Goitstock. 2, J. H. Wilson. 3, W. E. F. Pickard, Thorne. *hc*, Bowman & Fearon, Whitehaven.

DORKINGS (Any colour).—1, J. Harvey, Sheffield. 2, R. D. Holt, Orrest Head. 3, W. H. King, Sanfield. *hc*, S. Burn, Whitby; R. Smalley, Lancaster.

COCHIN-CHINA (Cinnamon and Buff).—1, J. H. Dawes, Birmingham. 2, J. Poole. 3, C. W. Brierley. *hc*, Miss Aglionby, Hawkhead. *c*, J. Poole.

COCHIN-CHINA (Brown and Partridge).—1, Cup, for best pen of Brahmas or Cochins, T. Stretch, Ormskirk. 2, T. Stretch. 3, J. Hodgson, Ulverston.

COCHIN-CHINA (White).—1 and 2, R. Smalley. 3, T. Ashburner, Ruskinnville, Dalton-in-Furness. *hc*, R. Brown, Moseley Grange, Halm.

COCHIN-CHINA (Any variety).—*Chickens*.—1, J. Poole. 2, G. Hall. 3, J. Coward, Ulverston.

BRAHMA POOTRA (Any colour).—1, C. W. Brierley. 2 and 3, C. Leyland, Warrington. *hc*, Miss Aglionby; J. Poole. *c*, A. Fulton, Milnthorpe.

HAMBURGS (Golden-pencilled).—1, H. Beldon. 2, H. Pickles, jun., Earby. 3, T. Robinson.

HAMBURGS (Silver-pencilled).—1, Cup for best pen of Hamburgs, H. Beldon. 2, W. M. Mann, Kendal. 3, J. Walker.

HAMBURGS (Golden-spangled).—1, T. Hanson, Keighley. 2, W. McMetton, Glossop. 3, H. Beldon. *hc*, J. Walker, Knaresborough; T. Medway, Newton Abbot.

HAMBURGS (Silver-spangled).—1, H. Beldon. 2, J. Fielding, Newchurch, Manchester. 3, H. Pickles, jun.

ANY OTHER DISTINCT BREED.—1, H. Beldon. 2, J. Harvey. 3, Mason and Walker, Denton. *hc*, J. G. Milner, Bellerby; C. Layland.

GAME BANTAMS (Any colour).—*Cock*.—1 and 2, W. & H. Buckley. 3, G. Butcher, Ulverston. *hc*, H. J. Nicholson, Moorhouse, Cumberland; J. R. Robinson, Sunderland; J. Blamire, Horton.

GAME BANTAMS.—1, G. Maples, Wavertree. 2, J. Blamire. 3, and *hc*, J. Poole.

BANTAMS (Any other variety).—1, S. & R. Ashton, Mottram. 2, S. H. Stott, Rochdale. 3, T. C. Harrison, Hull. *hc*, W. Brotherton, Leeds.

DUCKS (White Aylesbury).—1 and 2, M. Seamons, Aylesbury. 3, Bowman & Fearon. *hc*, D. Hardie, Langholm.

DUCKS (Rouen).—1, T. Robinson. 2, A. Dickinson, Whitehaven. 3, D. Hardie. *hc*, A. Dickinson; S. Satterthwaite, Ulverston.

DUCKS (Any other variety).—1, C. W. Brierley. 2 and 3, T. C. Harrison. *hc*, S. Buru; S. & R. Ashton; C. Homfray, Glen Ucke.

SELLING CLASS.—1, J. H. Wilson. 2, R. Smalley. 3, W. R. Park. *hc*, C. W. Brierley; H. Pickles; J. Walker; G. Hall, Kendal; E. Ryder, Harrytown Hall, Woodley; L. Casson; J. Bowman; J. Schollick, Ulverston; T. Houlker; T. Sharples, Rawtenstall; T. Robinson; J. D. Nicholson; T. Ashburner.

CANARIES.

BELGIAN (Yellow).—1, T. Woodend, Ulverston. 2, J. Williamson, Ulverston. *hc*, J. Moffat, Ulverston. *c*, J. Paxton, Ulverston; W. Bradloy, Ulverston; J. Boulton, Ulverston.

BELGIAN (Buff).—1, J. Paxton. 2 and *hc*, J. Boulton. *c*, J. Paxton; J. Moffat.

MULES.—1, B. Minikin, Ulverston. 2, W. Bradley. *hc*, A. Forsyth, Ulverston. *c*, J. Poole.

PINEBALD (Yellow or Buff).—1, J. Boulton. 2 and *c*, J. Paxton. *hc*, J. Williamson.

LIZARD (Gold or Silver-spangled).—1, T. Cockerton, Ulverston. 2, J. Moffat. *hc*, W. Downham, Ulverston. *c*, W. Bradley.

COMMON (Yellow).—1, A. Forsyth. 2, M. Hunter, Ulverston. *hc*, J. Williamson. *c*, B. Kirkby.

COMMON (Buff).—1, B. Kirkby. 2, T. Sanderson, Ulverston. *hc*, J. Williamson; *c*, M. W. Hunter.

GOLDFINCHES.—1, J. Baxter, Ulverston. 2, T. Robinson, Ulverston. *hc*, J. Williamson; T. Sanderson. *c*, W. Bradley; T. Higin, Ulverston.

JUDGES.—*Poultry*: Mr. Teebay, Preston. *Canaries*: Mr. Benson, Barrow.

THORNE ORNITHOLOGICAL SOCIETY'S SHOW.

This Show took place in the Temperance Hall, Thorne, on the 9th inst. The room was rather small for the number of entries, and though the specimens were well arranged, some were placed at great disadvantage in respect to light.

Of Pigeons, the *Almond Tumblers* were of great merit, both as regards colour and qualities of head. The same may be said of the *Pouters*, in which class scarcely a bad pair was shown. Both the winning pens were Blue Pied, the first-prize pen exhibiting great length of thigh and feather; and the second-prize pen was very fine in style, colour, and condition.

The *Fantails* left little room for improvement, and the *Jacobins*, *Barbs*, and *Nuns* were generally good.

A magnificent pair of Yellow spike-crown *Turbits* stood first in that class; while an equally good pair of shell-crown Reds was second. *Carriers* were in the "Variety class," and a handsome pair of Blacks was first. The silver medal for Pigeons was won by the *Pouters*.

Of *Rabbits*, the entries were numerous, and the five classes well filled. The first prize for the best pair of Lop-eared fell to the lot of a most beautiful pair of Black and White that was almost perfect in all points. The medal was also awarded to this pair, though hard pressed by an excellent Yellow and White buck belonging to Mr. Easten, of Hull, the ultimate consideration only being that there were two animals in one pen and only one in the other. Mr. Allison's first-prize Black doe was of great merit; and the second-prize doe was a very fine specimen, though suffering from the defect of a broken shoulderblade. In the "Variety class" a White-Grey of great beauty was first; and an equally fine Himalayan second.

Among *Cage Birds* there were some good ordinary Yorkshire Canaries which leave great room for improvement; but the Goldfinches were a show in themselves, and there were many specimens of faultless style and colour, tame as *Turtle Doves*, with legs and feet white as ivory. Among *Linnet*s the winners were faultless birds, but the Mule and marked Canary class, though a large one, had no specimen of more than ordinary merit, not a single evenly-marked bird being shown. In the "Variety class," the first prize was awarded to a Thrush of great beauty and exceedingly tame.

TUMBLERS (Any variety).—1, C. Cowburn, Calls, Leeds. 2, T. C. and E. Newbitt. *hc*, H. Yardley, Birmingham; R. J. Leach, Middlesborough; Miss E. Grail, Thorne; J. Mason, Boroughbridge; H. Brown, Walkley (Almond Tumblers).

POUTERS (Any variety).—1, C. Cowburn. 2, J. Hawley, Bingley, Yorkshire. *hc*, H. Yardley; F. J. Leach; H. Brown. *c*, H. Brown.

FANTAILS (Any variety).—1, J. Hawley. 2, T. C. & E. Newbitt. *hc*, H. Yardley. *hc*, H. Yardley; F. J. Leach; T. C. & E. Newbitt.

JACOBS (Any variety).—1, J. Hawley. 2, C. Addy, Epworth. *hc*, H. Yardley; T. C. & E. Newbitt; J. Leach. *c*, C. Cowburn.

BARBS (Any variety).—1, F. J. Leach. 2, H. Yardley. *c*, J. Thompson, Bingley.

NUNS (Any variety).—1, A. A. Van der Meersch, London. 2, J. Mason. *hc*, P. Key, Beverley. *c*, F. J. Leach.

TURBITS (Any variety).—1, F. J. Leach. 2, H. Yardley. *hc*, W. Shaw. *c*, R. Sidall, Sheffield.

ANTWERPS OR DRAGOONS (Any variety).—1, H. Yardley (Antwerps). 2, T. C. & E. Newbitt (Antwerps). *hc*, F. J. Leach (Dragoons). *c*, E. Norman, Northampton (Blus Antwerps).

ANY VARIETY.—1, F. J. Leach. 2, T. C. & E. Newbitt. *hc*, J. Clark, Thirsk (Carriers); E. Norman (Sions).

SELLING CLASS.—1, E. Norman. 2, H. Hawley. *hc*, P. Key (Barbs). *c*, J. Thompson.

RABBITS.—Any colour.—1 and Medal, W. Allison, Sheffield (Black and White). 2, A. H. Easten, Hull (Lop-eared Fawns). *hc*, B. Wattam, Thorne (Yellow and White). *Buck* (Any colour).—1, A. H. Easten (Yellow and White). 2, C. King, London (Black and White). *hc*, G. Jones, Bir-

mingham (Black and White); J. Lee, Sheffield (Lop-eared). *'Doc* (Any colour).—1, W. Allison (Black). 2, F. Grail (Lop-eared). *hc*, J. R. Jeasop, Hull (Black and White); C. King, London (Grey and White, and Black); A. H. Easten, Hull (Black and White); F. Roberts (Yellow). *Heaviest*.—1, J. Dixon, York (Black and White Lop Doe). 2, G. Jones (Fawn Doe). *hc*, W. Tattersall, Thorne (Doe); G. Mangham, Sheffield (Grey Doe). *Any Variety*.—1 and 2, A. H. Easten (Silver-Grey Doe, and Himalaya Buck). *hc*, G. Jones (Angors).

CANARIES.—Yellow.—1, W. Green. 2, C. Gunnee. *hc*, T. Maynard, Epworth; Miss Wagstaff, Thorne. *Buff*.—1, H. Green, Thorne. 2, T. Maynard. 3, W. Roberts, sen. *c*, G. Addy. *Mule or Marked*.—1 and 3, J. Green, Uffington, Stamford. 2, T. Maynard. *hc*, J. Green; A. Wells, Hatfield; J. Haycroft, Thorne.

GOLDFINCH.—1, T. Purdy, Thorne. 2, G. Crackles, Thorne. 3, G. Horburgh, Hatfield. *hc*, R. Hessel, Hatfield; T. Maynard; W. Bleasby, Thorne. *c*, C. Horburg, Brodsworth.

LINNET.—1 and 3, A. Woodward. 2, C. Gunnee. *hc*, J. Firth, Thorne.

ANY VARIETY.—1, J. Firth. 2, C. Sanderson, Thorne (Lark). 3, J. Haycroft (Thrush). *hc*, A. Wells, Hatfield (Lesse Red Pool). *c*, W. Bleasby, Thorne.

The Judges were Mr. E. Hutton, Padsey, Leeds; and Mr. T. C. Addy, Epworth, Bawtry.

THE CRYSTAL PALACE BIRD SHOW.

ONCE again we have the pleasure of directing the attention of our readers to the annual Show of Canaries and British and Foreign birds now being held at the Crystal Palace, and which will close to-morrow (Friday) night.

We have, hitherto, expended so much eulogium on these periodical shows that we are at a loss for words to express our admiration of the collections now on view. It is without doubt one of the most splendid and brilliant displays of the kind that it has ever been our good fortune to witness; words alone will not convey any adequate idea of its magnificence. So beautiful are the various specimens, so exquisite their several qualities, that any attempt to describe them would be utterly futile. It is evident that these shows do much to encourage interest and pleasant rivalry among those who give their attention to the study of the ornithological portion of natural history.

We will, however, endeavour to give a slight notion of what we fail to describe by pointing out a few of the classes most worthy of a visitor's attention.

We will commence with the *Canaries*, the most favoured of all feathered pets, more especially by the "softer sex." The various little kind attentions, the loving caresses, and sweet smiles bestowed on these little songsters often induce one to exclaim mentally, "I wish I were a bird."

The Norwich, the Belgians, the Spangled Lizard, and the London Fancy classes are most superb. The Mules also deserve unlimited praise. Among the *British Birds*, the Bullfinch, the Goldfinch, and the Blackbird are finely represented both in plumage and in quality. A very interesting variety of the Bullfinch and an Albino Lark attract considerable notice, and each deservedly obtained a prize.

The *Foreign Birds*, generally, are in very beautiful plumage and condition, the Java Sparrows and Virginian Nightingales being particularly fine. We noticed two very beautiful specimens of Leadbeater Cockatoo which drew great attention, and which obtained a special prize. There is also a very extraordinary and beautiful variety of the Bengal Parakeet, perfectly yellow, which on account of having arrived too late could not obtain a prize, although well deserving one.

Too much praise cannot be accorded to the Superintendent, Mr. Wilkinson, for the admirable manner in which the arrangements of the Show are carried out, and for the facilities afforded to the several judges to perform their duties. Appended is a list of the awards:—

CANARIES.

NORWICH (Clear Yellow).—1, W. Havers, Norwich. 2, H. Vane, East Cowes. 3, J. Judd, Newington Butts. Extra 3, E. Bemrose, Derby. *hc*, E. Bemrose; W. Walter, Winchester; J. Smith, Borrowash; P. Flexney, Caledonian Road, London; J. Bexson, Derby; T. Irons, Northampton. *c*, W. Walter; J. Smith; G. Tuckwood, Nottingham; J. Moore, Norwich; P. Flexney; P. Jackson, Crystal Palace.

NORWICH (Clear Buff).—1, W. Havers. 2, G. Tuckwood. Extra 2, E. Bemrose. 3, P. Flexney. *hc*, Moore & Wynn, Northampton; T. Irons; J. Bexson; E. Bemrose. *hc*, W. Walter; J. Smith; H. Vine; T. Irons; J. Bexson. *c*, J. Judd; R. Mackley, Norwich; W. Walter; Moore & Wynn; J. Moore; J. Bexson; P. Jackson.

NORWICH (Even-marked or Variegated Yellow).—1 and 2, Moore and Wynn. 3, R. J. Tronke, Redland, Bristol. *hc*, J. Judd; J. Bexson. *hc*, R. Mackley; W. Havers. *c*, H. Apted, Worthing; J. Bexson.

NORWICH (Even-marked or Variegated Buff).—1 and 3, Moore & Wynn. 2, E. Bemrose. *hc*, E. Bemrose; R. Mackley; S. Tones, Northampton. *hc*, R. Mackley; W. Walter; J. Bexson. *c*, J. Judd; S. Tones; H. Apted, Worthing.

NORWICH (Ticked, or Unevenly-marked Yellow).—1, E. Bemrose. 2, G. Tuckwood. *hc*, H. Vine; H. Warren, Norwich; Moore & Wynn. *hc*, W. Walter; J. Smith. *c*, R. Mackley; S. Tones; G. Goulter, Cambridge Road, London.

NORWICH (Ticked, or Unevenly-marked Buff).—1, 2, and Extra 3, E. Bemrose. 3, J. Smith. *hc*, R. Mackley; J. Smith; J. Chapman, Norwich. *hc*, W. J. Toon, Kettering; H. Warren; Moore & Wynn; S. Bunting, Derby. *c*, W. Walter; H. Apted.

NORWICH (Crested Yellow).—1, Moore & Wynn. 2, J. Bexson. *hc*, R. Mackley; Moore & Wynn; S. Tones. *hc*, R. Mackley. *c*, St. John and Sherwood; S. Tones.

NORWICH (Crested Buff).—1, J. Judd. 2, Moore & Wynn. 3, R. Mackley. *hc*, W. Walter; Moore & Wynn; S. Tones. *hc*, J. Young, Monkwear-

mouth; W. J. Toon; Moore & Wynn. c, J. Young; W. Walter; W. J. Toon; Moore & Wynn.

BELOIAN (Clear Yellow).—1, J. Baxter, Newcastle. 2, E. Hawkins. *vhc*, E. Mackley; E. Bemrose. *hc*, W. Needler, Hull. c, E. Hawkins; C. Carver, Landport.

BELOIAN (Clear Buff).—1, R. Mackley. 2, E. Hawkins. *vhc*, J. Doel, Stonehouse; E. Hawkins. *hc*, E. Bemrose; W. Needler; J. Doel.

BELOIAN (Variegated or Ticked Yellow).—1 and 2, E. Bemrose. 3, R. Mackley. *vhc* and *hc*, J. Baxter.

BELOIAN (Variegated or Ticked Buff).—1 and 2, E. Bemrose. *vhc*, J. Besson; J. Baxter. *hc*, R. Mackley.

BELOIAN (Crested or any other variety).—1, H. Ashton, Prestwich. 2, Mrs. Johnson, Brampton.

LONDON FANCY (Jonque).—1, W. Brodrick, Chadleigh. 2, *vhc*, *hc*, c, J. Waller, Finsbury.

LONDON FANCY (Mealy).—1, T. Mann, Cambswell. 2, W. Brodrick. Extra 2, J. Waller. *vhc*, J. Waller; T. Mann. *hc*, J. Waller.

LIZARD (Golden-spangled).—1 and 3, G. Tuckwood. 2, H. Ashton. *vhc*, Rev. V. Ward, Canterbury; T. Fairbrass; E. Bemrose. *hc*, J. Judd; W. Walter. c, F. W. Fairbrass, Canterbury; E. Bemrose.

LIZARD (Silver-spangled).—1 and 3, G. Tuckwood. 2, H. Ashton. *vhc*, J. Waller; E. Bemrose. *hc*, T. C. Westfield, Old Kent Road. c, T. Fairbrass.

JONQUE CINNAMON.—1, T. Irons. 2, Moore & Wynn. *vhc*, T. C. Westfield; S. Tomes. *hc*, H. Vine; Moore & Wynn. c, A. Sutherland; St. John & Shorwood, Sunderland.

BUFF CINNAMON.—1 and 3, H. Vine. 2, Moore & Wynn. *vhc*, J. Young; Moore & Wynn. *hc*, H. Vine; T. C. Westfield. c, J. Waller; Moore & Wynn.

ANY OTHER VARIETY.—1 and 2, W. Alexander, Edinburgh (Clear Buff Glasgow Dou, and Scotch Fancy Don). Extra 2, W. Barnes, Cannon Street (German Crested). 3, Moore & Wynn (Crested Cinnamon).

Extra 3, F. D. Lewin, Lee (St. Helena). *vhc*, W. Alexander (Scotch Fancy Don); J. Jones, Manchester (Yellow Variegated Cinnamon and Variegated Cinnamon). *hc*, Moore & Wynn (Crested Cinnamon); J. Baxter (Dan Marked). c, S. Tomes (Jonque Variegated); T. Irons (Variegated Buff Cinnamon); P. Jackson.

GOLDFINCH MULE (Yellow).—1, H. Ashton. 2, J. Doel.

GOLDFINCH MULE (Buff).—1, J. Young. 2, H. Ashton. *vhc*, J. Young; J. Doel. c, H. Ashton; C. Obermuller.

GOLDFINCH MULE (Variegated Yellow).—1 and 2, J. Doel. Extra 2, 3, and Extra 3, H. Ashton. *vhc*, J. Young; J. Doel. *hc*, E. Stansfield, Bradford. c, E. Bemrose; J. R. Adam; R. Mackley.

GOLDFINCH MULE (Variegated Buff).—1 and 3, H. Ashton. 2, J. Young. Extra 3, J. Doel. *vhc*, E. Bemrose; J. Doel; J. Young. *hc*, W. Walter; J. Doel; R. Mackley. c, S. Bunting; W. Walter; E. S. Pierce.

GOLDFINCH MULE (Dark).—1, Moore & Wynn (Jonque); S. Tomes (Mealy). 2, H. Ashton (Jonque); G. Tuckwood (Mealy). *vhc*, J. Baxter; W. Walter; H. Vine; P. Jackson. *hc*, J. Doel (Jonque); Miss Dalton; W. Walter. c, R. Mackley; E. Stansfield.

MULE (Linet).—1 and 2, H. Ashton. *vhc*, J. Baxter. *hc*, J. King, Newcastle. c, R. F. Troake.

MULES (Any other variety).—1 and 2, H. Ashton (Greenfinch and Goldfinch, Goldfinch and Bullfinch). *vhc*, E. Stansfield. *hc*, R. Mackley; J. Besson; J. Judd. c, S. Tomes.

NORWICH (Best six in one cage).—1, W. Walter. 2, R. Mackley. 3, Moore & Wynn. *vhc*, J. Judd; Moore & Wynn. *hc*, S. Tomes. c, P. Jackson.

BELGIAN (Best six in one cage).—1, 2, and *vhc*, E. Hawkins, Bear Street, Leicester Square. 3, J. Baxter. c, C. Carver.

LIZARDS (Best six Golden-spangled in one cage).—1 and 2, E. Hawkins. 3, J. Judd.

LIZARDS (Best six Silver-spangled in one cage).—1, Withheld. 2, J. Judd. 3, E. Hawkins.

GOLDFINCH MULES (Best six in one cage).—1 and 3, J. Doel. 2, H. Ashton. *vhc*, W. Walter; R. J. Troake. *hc*, J. Young.

MISCELLANEOUS.—Prize, Moore & Wynn (Goldfinch and Greenfinch).

BRITISH BIRDS.

BULLFINCH.—1, H. Vine, Woolwich. 2, J. Judd. *vhc*, Mrs. S. Tomes; W. Barnes. *hc*, R. F. King, Norwood; Mrs. G. Goulter.

GOLDFINCH.—1 and *vhc*, J. Judd. 2, Moore & Wynn. 3, H. J. Ims, jun., Bloomsbury. *hc*, W. Smith, Peckham; J. B. H. Oxley, Bloomsbury; J. King, King's Cross; R. Francis, Walworth Road. c, H. Vine.

LINNET.—Prize, S. Bunting, Derby. *hc*, S. Hinds; P. Jackson. c, S. Hinds.

SKYLARK.—1, J. Judd. 2, S. Hinds. *vhc*, J. Judd; S. Hinds. *hc*, C. Obermuller, Great Portland Street, London; S. Hinds; H. J. Ims, jun.

WOODLARK.—Prize, S. Hinds.

ROBIN.—Prize, S. Hinds. *vhc*, H. J. Ims, jun. *hc*, Miss M. A. Robinson, Sydenham.

BLACKBIRD.—Prize, T. J. Townsend, Upper Norwood. *vhc*, T. Hew, Northampton. *hc*, W. Newman, Norwood. c, S. Rudd, Peckham.

SONG THRUSH.—Prize, J. Trussan, Norwood. c, S. Rudd.

STARLING.—Prize, B. Brett, Norwood. *hc*, G. Mustoe, Norwood; H. J. Ims, jun.

MAOPHE.—Prize, A. Von Glehn, Sydenham.

ANY OTHER VARIETY OF BRITISH BIRDS.—1, E. Hawkins (Variegated Bullfinch). 2, E. Bemrose (White Skylark). 3, Rev. H. Russell, Rotherham (Pied Linnet). *vhc*, G. Marwick, Brighton (Cinnamon Sparrow); E. Hawkins (Snow Bunting). c, W. Barwell, Northampton (Black Bullfinch).

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

BLACKCAP.—Prize, C. Obermuller.

NIGHTINGALE.—Prize, C. Obermuller.

SISKIN OR ABERDEVINE.—Prize, R. Mackley. *vhc*, J. Judd. *hc*, W. B. Bailey, Parflect.

FOREIGN BIRDS.

COCKATOO (Lemon or Orange-crested).—1, K. H. Douglas. 2, M. George, Upper East Smithfield. *vhc*, W. Norton, Shoreditch. *hc*, W. B. Bailey.

COCKATOO (Leadbeater or Rose-breasted).—1, Mrs. Astley. 2, W. Walter. *vhc*, W. B. Bailey; A. Isaacs, Princess Street, Soho; A. Lyon, Bloomsbury Square. *hc*, A. Isaacs.

COCKATOO (Any other variety).—Prize, A. Isaacs (Downy). *hc*, J. Judd (Nosieal).

GREY PARROTS.—1, J. Judd. 2, C. W. Wass, Upper Norwood. *vhc*, E.

Upton, Upper Norwood; T. Middleton, Brixton. *hc*, C. Thompson, Upper Norwood.

GREEN OR ANY OTHER VARIETY OF LANCE PARROTS, EXCEPT GREY.—1, T. Boyce, Notting Hill (Australian Parrot). 2, W. B. Bailey (Bull-a-Bull Parrot). 3, Rev. A. W. Bookor, Rode, Lawton (Green Amazon Parrot).

c, W. Walter (Green Parrot); J. Rose, Norwich (Amazou).

LOVE BIRDS.—Prize, J. Judd. *vhc*, E. Hawkins. *hc*, W. B. Bailey.

AUSTRALIAN GRASS PARAKEETS.—Prize, H. Vine. *vhc*, J. Judd. *hc*, J. Jones; E. Hawkins. c, A. Isaacs; P. Jackson.

RING-NECKED OR BENGAL PARAKEETS.—Prize, W. B. Bailey. *hc*, G. Hart, Walworth; P. Raven, Wellington Street, Strand.

ANY OTHER VARIETY OF SMALL PARROTS OR PARAKEETS.—1, W. Walter (Turquoisenes). 2, — Dittmas, South Norwood (Mauritius Parakeets).

hc, E. Hemmer (Australian Rosellas).

KING PARROTS.—Prize, A. Isaacs.

ROSEHILL PARAKEETS.—Prize, J. Judd.

PENNANT'S PARAKEETS.—Prize, A. Isaacs. *hc*, W. Walter.

COCKATEALS.—Prize, W. B. Bailey. *vhc*, J. Judd. *hc*, A. Isaacs.

ANY VARIETY OF LORY.—Prize, J. Judd.

DIAMOND SPARROWS.—Prize, J. Jones. *hc*, P. Jackson.

CORAL-NECKED SPARROWS.—Prize, E. Hawkins.

JAVA SPARROWS.—Prize, J. Judd. *vhc*, E. Hawkins; W. Walter. *hc*, W. B. Bailey.

INDIGO BLUE BIRDS.—Prize, E. Hawkins.

ANY VARIETY OF WAXBILLS.—Prize, E. Hawkins. *vhc*, W. Walter.

VIRGINIA NIGHINGALES.—Prize and *vhc*, W. Walter. *hc*, C. Obermuller.

W. B. Bailey.

CARDINALS.—Prize, E. Hawkins. c, W. B. Bailey.

ANY OTHER VARIETY OF FOREIGN BIRDS.—1 and 3, W. Walter (Macaw Parakeets and White-headed Mannakins). 2, E. Hawkins. *vhc*, W. Walter (Madagascar Bird and Pintail Nouporeil); J. Judd (Zebra Birds and White-headed Mannakins). *hc*, W. B. Bailey (Australian Diamond and Zebra Finches); P. Jackson (Spice Bird). c, W. B. Bailey (Pope).

SELKIRK POULTRY SHOW.

THE following awards were made at this Show, held on the 10th and 11th inst. in the Volunteer Hall, Selkirk:—

SPANISH.—1, R. Somerville, Edinburgh. 2, D. Waugh, Melrose. 3, W. Hughes, jun., Selkirk. *hc*, W. Paterson, Langholm; Miss B. Ridpath, Edinburgh.

DORKINGS (Coloured).—1, G. H. Plummer, Dalkeith. 2, Miss Malcolm, Milnholm. 3, J. Paul, Glasgow. *hc*, T. L. Jackson, Bush of Ewes; T. Raines, Bridgehaugh; W. Brown, Selkirk.

COCHIN-CHINAS.—1, W. R. Park, Abbotsmeadow. 2 and 3, J. H. Dawes, Birmingham.

BRAMA POOTRAS.—1, J. A. Dempster, Stirling. 2, R. Brownlie, Kirkcaldy. 3, J. Anderson, Melrose. *hc*, Miss E. Shuriff, Selkirk; D. Murray, Selkirk.

HAMBURGERS (Golden-pencilled).—1, W. R. Park. 2, D. Normand, Kennoway. 3, W. Scott. c, W. Linton, Selkirk.

HAMBURGERS (Silver-pencilled).—1, J. Platt, Dean. 2, W. R. Park. 3, J. Musgrave, Longtown.

HAMBURGERS (Golden-spangled).—1, R. Dickson, Selkirk. 2, D. Skeoch, Stewarton. 3, A. Heatlie, Selkirk. c, J. F. Loversidge, Newark.

HAMBURGERS (Silver-spangled).—1, G. Walker, Selkirk. 2, G. Caithness, Carnoustie. 3, T. Musgrave. c, W. Bowe, Carlisle; J. U. Somner, Jedburgh.

GAME (Any variety).—1, H. M. Julian, Hull. 2, J. Muirhead, Tranent. 3, W. Crosthwaite, Stanurke, Carlisle (Black Red). *hc*, D. Hardie, Sorbie (Black Red); J. J. McGregor, Hill's Wynd, Crieff (Brown Red); J. Stark, Crossgates (Brown Red). *Chickens*.—1, J. Waddell, Acrehead (Black Red).

2, D. Hardie (Black Red). 3, H. M. Julian. *hc*, W. Brown, Selkirk (Brown Red); W. Tait, Heatherlie, Selkirk (Brown Red); W. Crosthwaite (Black Red). c, W. Lockie, Newton, St. Boswells (Black Red).

GAME BANTAMS (Black or Brown Red).—1, D. Hardie (Black Red); 2, T. Raines (Black Red). Third, W. Mabon, Jedburgh (Brown Red).

GAME BANTAMS (Any other variety).—1, J. Waddell (Duckwing), 2, Miss Brownlie (Duckwing). 3, A. Hatelie, Selkirk (Duckwing).

BANTAMS (Any variety except Game).—1, T. C. Harrison, Hull. 2, J. H. Dawes (Japanese). 3, T. Watson (Bridge of Earu (Golden Sibrighs)). *hc*, J. Archibald, Earlston (Japanese); S. & R. Ashton, Mottram (Black); A. Mills, Loanhead, Kirkcaldy (Black).

DUCKS (White Aylesbury).—1, A. Hoggart, Leslie. 2, D. Hardie. 3, J. Scott, Newhall. *hc*, G. Dryden, Selkirk; J. S. Fair, Jedburgh. c, G. Dryden.

DUCKS (Rouen).—1, D. Hardie. 2, J. Hall, Jedburgh. 3, W. Edgar Dundalehaugh, Selkirk.

COTTAGERS' CLASS.—1, J. Beattie, Rink (Brahma Pootras). 2, D. Waugh, Melrose (Spanish). 3, D. Murray, Selkirk (Brahma Pootras). *hc*, A. Young, Earlston (Golden-spangled); W. Hart, Gattonside (Brahma Pootras); J. Davidson, Longtown (Duckwings); J. L. Brown, Selkirk (Cochin-Chinas); R. Hogg (Brown Red Game); W. Rutherford, Selkirk (Brahma Pootras).

SELLING CLASS.—1, R. Somerville, Edinburgh (Spanish). 2, T. L. Jackson. 3, J. Beattie (Brahma Pootras). *hc*, G. McMillan, Jedburgh (Black Red); W. Mabon, Jedburgh (Brown Red); W. Carruthers, Philipburn (Dorkings).

BANTAM COCK SWEEPSTAKES.—1, G. McMillan (Black Red). 2, J. L. Brown, Selkirk (Black Red Game).

PIGEONS.

TUMBLERS (Any variety).—1, H. Yardley, Birmingham. 2, J. Pringle, Newcastle-on-Tyne. *hc*, J. Campbell, Langholm.

HORSEMAN OR CARRIERS.—1 and 2, G. J. Dart, Acrehead. *hc*, J. Campbell; H. Yardley.

FANTAILS.—1, A. Smith, Broughty Ferry. 2, H. Yardley.

POUTERS.—1, J. Waddell. 2, J. E. Spence, Edinburgh. *hc*, A. Wright, Edinburgh.

JACOBINS.—1, H. Yardley. 2, J. Waddell. *hc*, R. Paterson, Melrose. J. Spence; J. Simson, Fanidshope.

NUNS.—1, R. Paterson. 2, W. Cheyne, Selkirk.

OWLS.—1, R. Paterson. 2, W. R. Park.

TURBETS.—1, H. Yardley. 2, R. Paterson.

ANY OTHER VARIETY.—1, Miss Crosbie. 2, J. Campbell, Langholm (Magpies). *Ac*, H. Yardley.

SELLING CLASS.—1, W. R. Park (Fantails). 2, J. Waddell (Jacobins).

JUDGE.—James Dickson, Esq., Bradford.

ANTWERP PIGEONS.

IN the course of some remarks upon the Antwerp Pigeon Mr. Huie says that it cannot be accepted as a "fancy bird worthy of cultivation," because it is "cross-bred." The majority of fancy Pigeons now exhibited are the result of cross-breeding; and it is by cultivating and developing some peculiarity in shape or markings, produced by mating birds of different breeds, that new varieties are produced. The points of Antwerps are as definite as those of any other variety, and the birds breed very true to colour, shape, and size. I have bred them many years, and for an experiment have tried several crosses, but the young produced have invariably lost the compact and beautiful shape, so striking to the eye of a fancier in the true Antwerp.

The first birds of the breed I ever saw were brought to this country by a dealer in German Canaries. They were mostly Blue and Blue Chequers, with a few Duns, resembling each other very closely in size and general appearance, and were quite different from any of our English birds. The only breed at all resembling them was the Skinnun, but the birds differed widely in the shape of the head and in general outline.

The Antwerp may not make headway in Scotland, but it is fast making headway here, and its many excellent qualities render it a great pet with those who keep it. As a nurse and as a homing bird it has no superior; it is also beautifully feathered, and I have no doubt Antwerps will before long be one of the strongest classes at our shows, as wherever prizes are offered the breed is invariably well represented. If being cross-bred is the only objection that can be raised against it, I do not see why it should not take the same position as Dragons and other established cross-breeds.—B. F. C.

STAINED CANARIES.

HAVING for some time past been a reader of your paper, I have observed that judges, committees, and exhibitors at shows are getting somewhat at "loggerheads," and I think it is high time that a better understanding should be come to between them. With this view, I send you an Ipswich newspaper, by which you will see that I was an exhibitor of Canaries at the last Lowestoft Poultry and Bird Show, and that the Judges awarded me some few prizes, by which I became entitled to the cup; but a protest was afterwards sent in to the Committee, that my birds were artificially coloured, in consequence of which protest the awards were taken from me, and given to the next exhibitor on the list, who turned out to be the protester.

On hearing this, I sent in a statement to the Committee that my birds were not artificially coloured, and that I should expect to have all that had been awarded to me. I received in reply that the Committee intended to abide by the decision of the Judges—which, according to the rules of the Society, was in all cases to be final.

Failing to get redress, I placed the matter in the hands of a solicitor, who took it into the County Court, where, as you will see by the paper sent, a jury gave a verdict for the plaintiff. You will not fail to notice one or two important points in this case. One is, his Honour stated, that "if the birds were *bona fide* Canaries, and not artificially coloured, the award of the Judges must be final; but if they were afterwards found to be artificially coloured, it would be contrary to all precedent to allow such birds to take the prizes."

In conclusion, I may state that the tails of my birds were found, on being wetted, to give off a colouring matter; this I attributed to the fact that the floor of the house wherein my birds are kept is always strewn with "crag," and that I never think of washing my birds before sending them for show.—THOMAS FENN, Ipswich.

[The trial referred to was before Mr. Worlledge and a jury in the County Court held at Lowestoft on the 29th of January, and the facts being admitted, the sole question was, Were the birds artificially coloured?

The following summing-up of the Judge shows the weak points in the case:—

His Honour, said if the Judges had awarded to plaintiff prizes

amounting to £6 11s. 6d., plaintiff would be entitled to that sum in the event of the jury finding a verdict for him. It was a grave charge against the plaintiff to say that he had obtained the prizes by fraud, for it was nothing more nor less than that. He thought the jury would agree with him that there was no evidence from which they could come to the conclusion that the birds were sent coloured from Ipswich. Then, he must ask, what motive could any man have to colour those birds while in their transit? Indeed, he could not see what opportunity anybody could have had of doing so. That being so, the facts appeared to him to be—either the birds were sent coloured from Ipswich, or they were exhibited in their natural condition. He could not see that there was any third conclusion they could come to. Therefore it was the more important that they should consider the case carefully. With reference to the plaintiff, it was a very grave charge to say that he sent the birds falsely coloured so as to get the prizes by false pretences. They must also observe in favour of the plaintiff that he has been in the employment of Messrs. Turner fifteen years, and not one single imputation was attempted to be thrown upon him. So far as everything had gone in the Court, the plaintiff stood there as a thoroughly respectable man. Nevertheless, they must take the evidence into account. The fraud charged against plaintiff is that he coloured the birds with some unknown substance. Very often when persons are charged with poisoning, evidence is given that the person so charged had had poisonous matter in his possession. The defendants had not shown that plaintiff ever had any colouring matter. The theory on the part of the plaintiff is—and it deserves the attention of the jury—that, for the first two years that he kept birds, he lost many of them. He afterwards kept the birds on crag, which is of a yellowish hue, and, since then, he has scarcely lost any. That fact was confirmed by Baker, who had said that he saw the birds on the crag on the very morning of the day that they were sent to Lowestoft. They must also remember there was plaintiff's own oath that he never coloured his birds with anything artificially, and that the stain which came off must have been from the crag. Now, when a man of respectability swore positively to a thing, they ought to give considerable weight to it, because the man would not only be guilty of a gross fraud, but he must come into court to cover that fraud by committing gross perjury afterwards. The jury must believe, first, that plaintiff coloured the birds fraudulently, and then that he afterwards committed the most wilful perjury. That was a stigma they ought not to fix upon any man, except upon very conclusive evidence. What was the evidence on the part of the defendants? Mr. Green, a competitor, made the protest against the awards. It certainly had struck him (his Honour) to ask why had not Mr. Green been called to tell them what it was that led him to make the protest, and what led him to suppose that those birds were coloured? He should like to know why he was not produced. When a charge of fraud was brought against a man he certainly thought that the man who founds that charge ought to come forward. The fact of Mr. Green entering a protest was no proof that plaintiff had coloured the birds, but the defendants acted upon it. The proper course would have been to have had the crag-coloured and the saffron-coloured handkerchiefs, with the colour got off the birds, side by side. The defendants do now say that the colour was not that of crag which came off the birds. Unless there was a comparison made at the time as to the difference of shade, how can anyone be certain? Then it was said that was not all. There was a gentleman who bought a pair of birds of the plaintiff, and those birds also betrayed colouring; the colour which he wiped off was a bright yellow. But here again they had no comparison, which could have been made at the time. He (his Honour) did not suppose that any of the gentlemen who had been called to speak for the defendants were aware that the birds had been kept upon crag, and they naturally jumped to the conclusion that the birds were artificially coloured. Had they known it, they might have qualified their opinion as to the kind of stains which were produced by wiping the birds. The two gentlemen who awarded the prizes were Messrs. Simmons and Clarke. Simmons had been called before them, but why Mr. Clarke, of Ipswich, who was in court, had not been called by either party he could not understand, but he must say that he thought it was not incumbent upon the plaintiff to call that man (Clarke). Plaintiff stood upon the awards, and it was for the defendants to displace them. So there were two material witnesses who, if they had been called, might have thrown some light upon the matter. He (the Judge) was exceedingly glad that a jury had to decide the question. If they thought that plaintiff had been guilty of colouring his birds, and sending them to the show coloured with the view of increasing his chance of success, why then they would find a verdict for defendants; but if, on the other hand, they, as reasonable men, believed that the plaintiff was not guilty of fraud, and they had any doubt that plaintiff stained the birds, he must tell them it was their bounden duty to find a verdict for the plaintiff.

The jury retired about ten minutes, when they gave a verdict for plaintiff for £6 11s. 6d.

It is very evident that the jury did not believe the witnesses who testified that the birds were coloured, and they were quite justified in their disbelief, for, as the Judge observed, the colouring was alleged to be by "some unknown substance." Nothing could have been more easy than to show that it was saffron or gamboge which was suggested—the very doubt was damnifying—but no one suggested even the desirability of

applying chemical tests. In the absence of such evidence the jury did right.

One dictum of the Judge fully coincides with what we have always maintained. "His Honour said if the birds were *bonâ fide* Canaries, and not artificially coloured, the award of the Judges must be final; and if they were afterwards found to be artificially coloured, it would be contrary to all precedent to allow such birds to take the prizes."

TRANSPORTING BEES.

DOUBTLESS many an apiarian is at a loss how to move a weak hive into a better pasturage, or placed in the same position as myself, when led to devise the following box, to bring home a valuable present, or some well-selected purchase. A piece of circular wood is chosen or made (a), 20 inches round. On the top of this is nailed another piece, one quarter of an inch thick and 2 inches less in circumference, as b in the accompanying diagram; now, this is for a bottom. Then procure a box in which a cheese was brought from America; some are much too small, but choose one 18 inches in circumference, then scrape it well with glass and rub smooth with coarse sand paper. Now cut a 2-inch square hole in front, and nail a small piece of perforated galvanised zinc with small tacks. Procure an old bag, cut off the bottom, nail it on the rim of a at d. Now this, when stuffed full of straw, keeps the hive put in quite firm; if tied round with a piece of strong string it makes a very good handle. Directions for use:—The day before moving the hive of bees, about 3 or 4 p.m.

loosen it from the stand and place it on the bottom a. The next day, about the same time, place on c, and screw two screws at e and f, then put a little hay or straw at top, and tie tightly down. I had a hive of bees sent me from Devonshire into Staffordshire this autumn per rail, without twenty bees being killed or a comb broken.—A STAFFORDSHIRE APIARIAN.

SUPERPOSING.

"A DEVONSHIRE BEE-KEEPER" having given the readers of "our Journal" the benefit of the superposing story (page 94), related to him in a letter on another subject, I may be permitted to add its sequel. But first of all, for the information of "A. S." and more recent subscribers, I may mention that, seven or eight years ago, I took occasion to call in question the accuracy of the editorial reply to a querist that if he united two colonies at the end of the year, with free communication between, the upper would be vacated and the lower become the stock hive. I held quite the reverse of this opinion, from a rather extensive experience of such cases, maintaining that the lower hive would be vacated as the cold weather set in, enabling the querist to remove it, his sole object in proposing the union. "A DEVONSHIRE BEE-KEEPER" stepped forward to champion the descending principle, and was supported by very many of the southern fraternity, they looking at the upper stock from a super standpoint; while I was backed-up by the northerners on the ascending side, viewing the case on strict storifying principles, till a regular skirmish between north and south ensued, terminating, if I recollect, in your estimable correspondent, "B. & W.," throwing a little explanatory "oil upon the waters."

In the above controversy it was always assumed that the two hives to be united should be somewhat alike as to combs and store; but in the story inserted by my friend, Mr. Woodbury (page 94), the upper hive contained so very little comb, and the inmates being reduced to the famishing point, in such an extreme case I frankly confess I never supposed but on the union being effected they would joyfully descend to take possession of the well-found stock below. How very different

the result! On raising the musty old skep to expel the occupants, what a change in the weight, showing that, true to their instincts, they had gone up, carrying no inconsiderable portion of their store, and that comb-building was going on. It was in vain I tried to drive them; the day being too chilly for the operation, they would not budge. What was now to be done? I procured a deep octagon eke, inverted the little straw skep within it, setting the Stewarton boxes above, and on making a scrutiny two or three days afterwards, I found my little favourites, true to the ascending principle, had duly vacated the lower hive, re-transferring their store along with them, more than establishing the opinion so strenuously advocated by—A RENFREWSHIRE BEE-KEEPER.

GREAT MEETING OF GERMAN BEE-MASTERS AT DARMSTADT.

(Concluded from Vol. XV., page 453.)

BEFORE the regular proceedings of the second day commenced, it was decided that next year's meeting should be held at Nuremberg, and it was further agreed that Mr. Köhler's process for securing a pure breed of Italian or other species of bees was as sure, when properly applied, as is possible in a matter of the kind. Many attacks have been made upon him during the past year, some persons claiming priority of invention, which may or may not be true, as they kept their secret for the most part to themselves, and the opposition to him was, as is evident to unprejudiced lookers-on, owing to jealousy, and was a specimen of meanness happily not often found, and to which the Germans apply the term, not quite translatable into English, *Niederträchtigkeit*.

After the settling of this business a few remarks were made on the origin of hermaphrodites amongst bees, and several theories started, but nothing certain prodneed.

Next in order for the day's discussion was the question on some of the advantages of moveable combs, and especially since the invention of the centrifugal comb-emptying machine. The discussion mainly turned upon the difficulty of extracting the thick heather honey. The inventor himself, Major von Hruschka, being present, rose and was received with a storm of applause. He had been for the last four years considering all kinds of alterations and improvements, and thought that in the case of heather honey, or crystallised honey, the machine would do its duty if the combs were first warmed in a temperature of about 90° Fahrenheit. He thought also that he might soon have some other hints of the same kind to make known to bee-keepers.

After a few desultory remarks the President read the next question on the programme: "Which is the best method of making artificial swarms?" The speakers were Dr. Pollmann, Mr. Hewpel, and Mr. Dzierzon. The opinion seemed to be that driving and removing the swarm to another stand, at least a mile or two off, was the best of all, but only practicable with straw hives. For wooden hives with moveable combs it was recommended to remove every comb to a new hive with all the bees upon them, merely securing the queen and letting her return to her old hive fitted up with empty combs, guide combs, &c. The older bees will all return to the queen and former hive, and the swarm will become very strong and prosperous. Of course the hive which keeps only the young bees must have water supplied till they fly out and can fetch it for themselves.

After adjourning for luncheon, the assembly met once more and discussed the question: "What is the most suitable internal size for hives, and specially for the honey magazine?" Von Klipstein remarked that he had long come to the conclusion that a form as nearly circular as possible must be the best; but what is best in theory must often be modified in practice. His remarks refer specially to the brood-room, which is practically much the same as the winter room of the bees. Consequently the brood-room in wooden hives will be best when as nearly a cube as possible; with moveable combs one cannot well get nearer to a sphere, and one might take the space of 12 inches as a good one for the height and breadth of the frames; but practically it has been found that the bees then store too much honey at the sides of the combs, where in a severe winter they cannot always reach it; a better plan is therefore to add somewhat to the height, and to diminish the width, perhaps, to about 10 inches; the question then remains as to height under these circumstances. For hives with only one storey of frames, a greater height than 14 inches would be found inconvenient, as it is most important to be able to work

quickly and easily in the hives. Mr. Dathe formerly used frames 10 inches wide and 15 inches high, but on moving to Hanover found an inch less each way better. It depended much on the locality. For an early harvest smaller sizes are sooner ready, and swarm sooner, but not so continuously. Several other members spoke, and the result seemed to be that for places with rich harvests, a width not exceeding 11 inches, and for places with continuous though, perhaps, poor honey harvests, a width not exceeding 9 inches, with height and breadth in proportion, was considered to be most advantageous.

The next question was concerning the desirability of making the yearly meetings also places for wholesale dealers to purchase honey. This has naturally no interest for English readers. After this a question was raised as to the peculiarities of the bee found in some parts of Hanover, which, however, seem to be only owing to treatment and locality, the insect being identical with the ordinary bee. This we may also pass by. The same may be said as to the question whether railways might not be made more use of by bee-keepers than is now done. Possibly in some parts of England, where there are large tracts of heather within reach, the same question may some day be of interest.

After this point had been discussed it was found too late to enter into any further subjects which were on the programme, and after the distribution of prizes to the various exhibitors the dinner followed, and thus ended the fifteenth meeting of German bee-keepers.

BEE SAGACITY.

IN the middle of a hot June day, I was standing with the manager of our gasworks, near the large vertical pipes called condensers, down which a thin stream of water flows continuously, when my attention was attracted to a continuous hum, which, from its special character I was convinced arose from bees. On looking up I saw that hundreds of these industrious insects were crowding round the pipes, and on closer inspection I found that they alighted wherever the stream of water was thin and not too rapid; having satisfied their thirst they flew away and their places were occupied by others. From the large area, the numbers which availed themselves of this supply of water was very great. They drank only on the side exposed to the sun. In July these pipes were shielded by tarpaulin from the direct rays of the sun, and bees still were there, but in much less numbers, and again they drank only on the parts free of shade. Mr. Anderson told me that through the hot weather of May and June, the bees had come in the numbers I noticed. The selection of such a spot appeared to me singular, as within a short distance there is a large river, and a clear bubbling brook; but no water in the thin film which alone the instinct of the bees tells them is fitted for their use. The part of the works referred to is not exposed to clouds of steam or coal dust.—J. S. B., Bath.

OUR LETTER BOX.

BILLS OF AYLESBURY DUCKS (R. P. W.).—We are quite aware that the bills of Aylesbury Ducks have been tampered with. We have seen them rubbed down so hard with pumice-stone, that the blood exuded in small, almost minute particles. It was overdone, and they were disqualified. We quite differ about the natural colour of the drake's bill; in well-bred specimens it should not be a bright yellow, it should be a flesh colour, or a French white. We know they will change colour, and water will affect them; thus, the water draining from pent land will make them orange, while if they are turned into meadows where the frost is on the grass, or if they feed in colourless water, running, where shallow, over very small gravel, their bills become paler. We have a place where the water is dark, and we cannot keep Aylesbury Ducks without taking off half their value owing to the cause we have stated.

WHITE COCHIN-CHINAS—SILVER-GRAY DORRINGS (Recent Subscriber).—In many of the poultry books there are such spinnings-out of unnecessary verbiage, and such barefaced plagiarism, that we have, perhaps, erred on the other side, and said too little. White Cochins should have the same points as in other colours of the same breed. Their plumage should be quite white, and their legs very yellow. They should not be vulture-hocked. Silver-Gray Dorking cocks must have black breasts and tails, barred wings, white hackle and saddle, no buff or red feathers anywhere. One white feather in the breast, however small, is a disqualification. The hen must have black and white striped hackle, grey feathers with white shaft, pale salmon breast, but the less this colour pervades any other part of the plumage the better it is.

BALANCE SHEET OF POULTRY ACCOUNT (J. P.).—We see nothing extravagant in your feeding, but we cannot come to a correct estimate unless we have the exact number of chickens that were kept at the different periods. You have had hundreds of new-laid eggs at 2d. per dozen, and enough of good Dorking fowls, at 4s. 6d. per couple. You have added thirteen to your stock, all at an expense of four guineas. If you charge yourself 1d. each for new-laid eggs your yard is self-supporting.

GAME BANTAM BREEDING (F. M. Hulke).—We will bear your hint in mind. There is, however, little in rearing Game Bantams that differs from other birds. A very important point is to keep them away from the larger birds. These starve them by eating their food, often kill them by an unkind blow, at other times by incautiously treading on them. They require most care during the first fortnight of their lives; they also require the best feeding at that time. We always rear ours on a dry bank well exposed to the sun, and protected from the larger birds. It is necessary to keep them out of grass in wet or damp weather, or when there is white frost, and the hen should be put under a dry wig where a sudden shower will not cause a pool to be formed. It is not on account of any delicacy that this is necessary, but because they are so small.

DORRING HEN AND COCHIN-CHINA COCK (J. E. M.).—She will not breed true Dorkings till she has been some time separated from her Cochin mate. It is a disputed question whether any of the present laying of eggs would be pure. Gas tar is not injurious to poultry.

HEMP AND CANARY SEEDS FOR CHICKENS (Lemon Buff).—Hemp and canary are neither of them good for chickens. The first prevents the formation of feathers, the second softens them and causes them to fall. The birds want meat only occasionally, and it should be cooked. It is no longer necessary to feed after dark.

RICE MEAL (M. E.).—Rice in any form is the poorest—that is, the least nutritious of food; it is merely starch. It may be mixed with Indian corn meal or barley meal to render them less fattening, and with them mixed into a crumbly mass with hot water.

EGGS FOR HATCHING (S. A. K.).—They ought not to be older than fourteen days. If older they will produce chickens, but these are usually weaker than those from fresher eggs. We know of no experiments to test the extreme length of time eggs may be kept and yet produce chickens.

DEVONSHIRE DORRINGS (Kingsbridgenensis).—Your letter is an advertisement, and a very long one, too, in praise of your friend's fowls.

MISTAKE BY POULTRY SHOW OFFICIALS (Fowler).—As the mistake was made by the servant of the committee, we consider the committee are liable to pay you the £1 7s. which you have lost in consequence of the mistake. The secretary knew from the catalogue that only one bird ought to be in each pen. At the same time we advise you to compromise the claim, for it should always be remembered that all the risk and all the trouble are incurred by the unremunerated committee.

LICE IN SPANISH FOWLS (Tyro).—Dust under the feathers with flowers of sulphur, so that it reaches the skin of the fowl. Let the fowls have a heap of dry ashes under shelter to huck in, and mix with the ashes some flowers of sulphur.

ROUP IN PIGEONS (P. H. and Roup).—There is no doubt that this rainy and hence damp winter has greatly increased this disease among Pigeons, hence so many inquiries as to a cure for roup. It is of the nature of a bad cold; its cause—damp, cold draughts, manure left on the floor of the loft in wet weather, &c. Roup cannot occur without a cause, hence seek out the cause and remove it, prevention is better than cure. When birds are affected with this disease remove them into a warmer place, feed them extra well, adding hempseed, and giving a few peppercorns every other morning. It is kind and also reasonable to cleanse the poor bird's mouth and eyes with warm water, using a very small piece of sponge. Pigeon fanciers differ as to whether or not roup is contagious. We recommend separation in order to be on the safe side.

WALWORTH PIGEON-FLYING CLUB (Leo).—We do not know either the name or address of the secretary.

SUPERPOSING (A. S.).—You totally misapprehend the gist of the superposing tale, at page 94, the sole object being the supply of a queen to the hybrid stock, hence the expulsion. The "glittering Italians" were merely mentioned as a proof of the ascent and amalgamation. You may not be aware that a considerable proportion of the offspring of a hybridised queen—that is, a pure Italian princess impregnated by a black drone, vie in brilliancy of colour and marking with the pure-bred variety. You will find the sequel in another column.

TRANSFERRING BEES (Stupid).—Payne's Improved Cottage Hive, made somewhat larger than described in "Bee-keeping for the Many," say 16 inch in diameter, by 8 or 9 inches deep inside, is probably the cheapest and best for you to transfer the bees into from a common straw hive.

DONE AND OAT-CRUSHING MACHINES (G. R. P.).—Write to two or three of the great agricultural implement makers, tell them what you require, and ask them to send a list of prices.

INDIAN CORN MEAL FOR PIGS (A Subscriber).—If you have any small or waste potatoes, including the parings of those used at table, you may boil them and mix the whole with the meal for such pigs as are in a growing rather than in a fattening state, and as they advance towards the latter gradually withdraw the potatoes, and give more meal; as it is better to give harder food towards the last. We have not had any experience with turnips, but if the pigs like the food of which they constitute a part give it to them, ending as above with meal alone.

DRINKING FOUNTAIN (W. Brown).—If your contrivance differs from others already patented, or registered, there would be no obstacle to your patenting or registering it; but we advise you to do neither, the demand would not repay your outlay.

POULTRY MARKET.—FEBRUARY 17.

Our supply is getting short, and it is not improbable that we may have high prices for a short time, for the best qualities. The mild weather that will bring us early chickens, will also cause the winter poultry to get hard, because it will be as forward as the season.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	3	6 to 4	Guinea Fowls.....	2	6 to 3
Smaller do.....	2	6 to 3	Partridges.....	0	0 to 0
Chickens.....	2	0 to 2	Hares.....	0	0 to 0
Goslings.....	7	0 to 7	Rabbits.....	1	4 to 1
Ducklings.....	3	0 to 3	Wild do.....	0	9 to 10
Pigeons.....	0	9 to 10	Grouse.....	0	0 to 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEB. 25—MARCH 3, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.				
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.		
25	Th	Meeting of Royal and Zoological Societies, 8.30 p.m.	47.8	32.8	39.9	22	56	af 6	30	af 5	20	af 4	24	af 6	14	13	11
26	F		47.0	33.3	40.1	23	54	6	32	5	45	5	59	6	0	15	4
27	S	Royal Horticultural Society, Promenade.	47.6	33.4	40.5	26	52	6	31	5	9	7	39	7	16	12	58
28	SUN	3 SUNDAY IN LENT.	48.9	32.7	40.8	15	50	6	35	5	32	8	0	8	17	12	42
1	M	Meeting of Entomological Society, 7 p.m.	47.5	33.4	40.5	15	48	6	38	5	51	9	26	8	18	12	39
2	Tu	Royal Horticultural Society, Fruit, Floral.	48.6	34.5	41.6	16	46	6	39	5	11	11	53	8	19	12	18
3	W	Meet. of Soc. of Arts, 8 p.m. & Gen. Meet.	49.6	31.9	40.7	13	41	6	41	5	morn.	22	9	20	12	6	

From observations taken near London during the last forty-two years, the average day temperature of the week is 48.1°; and its night temperature 33.1°. The greatest heat was 87°, on the 3rd, 1862; and the lowest cold 14°, on the 3rd, 1862. The greatest fall of rain was 0.92 inch.

HOW SHALL WE PRUNE OUR FRUIT TREES?

IT is easy to write, but difficult to explain. It is easy to say, "Prune your fruit trees," or even to write an elaborate treatise on the general principles of pruning. "It is easier to write a book than to write it so as to be understood"—as an old and intelligent friend remarked to me one day as we stood sorrowfully looking at some Pear trees ruined through the mistaken kindness of an enlightened book-learned root-pruner. Some such thoughts

as these have often coursed through my mind on observing the horrid mutilations that fruit trees are frequently subjected to under the name of pruning. Pruning! what is it? We hear of it often enough, truly; some books are full from end to end about it, and yet the subject is about as little understood as anything in gardening.

Shall we prune our fruit trees? Undoubtedly a little pruning is in most cases indispensable, but how and when is it to be done? Those skilled in the art may tell us of their practice and the wonderful results arising from it, yet their practice if followed elsewhere ends sometimes in vexation and disappointment. Are there, then, no fixed rules, no royal road, laid down for the uninitiated to follow, enabling them thereby to achieve as grand results? Theoretically there are many, practically none. In practice with our fruit trees, we have so many variations of soil, climate, and even stocks to deal with, which all exert considerable influence as regards the fruit-bearing, that to lay down any fixed rule for the pruning and treatment of the trees is impossible. What may be advantageous for one condition, or one district, may in another be found totally impracticable. Nature herself teaches us that much if we would but watch her. In one locality we find the trees of a dwarf stunted character, in another they are rampant and vigorous. In one place we have light sandy soil and exposed situations, in another deep alluvial loam and comparative shelter. Shall we, then, expect in our cultivation to alter this natural order of things, and by the same practice produce the same results in each situation alike? Much may be accomplished by skill in moulding the one to a similarity of the other. The light soil may be enriched, and the strong loam impoverished, &c., but that can only be done in a very limited way. Unless, however, something of this sort be done, the growth of the trees in the two instances will be very different, and in order to induce an equal amount of fruitfulness, their treatment in respect to pruning will require to be very different also.

Climate, also, exerts considerable influence in regard to the growth of the tree, in some respects similar to that of the soil, but a damp climate will counteract the effects of a dry soil, assimilating the results to those afforded by a deep rich soil in a dry climate. In damp climates trees grow much more luxuriantly as a rule than in dry ones, and as luxuriance of growth is unfavourable to fruit-bearing, our treatment of the trees must be modified to suit the altered conditions.

Again, there is the question of the stocks on which our fruit trees should be grafted, which is of immense importance, as stocks exert the most wonderful influences. Nurserymen are beginning to study this subject, but gardeners and growers of fruit have as yet paid but very little attention to it, although it concerns them the most. Some stocks are fitted for one purpose, some for another; some succeed best in dry soils, some in wet ones; some are calculated to grow the trees to a large size, some for producing dwarf fruitful plants. All require different treatment if successful results are desired, yet how often do we see the treatment that is required for the one applied to the other? Who, for instance, could cultivate Apples satisfactorily in the dwarf bush or pyramidal closely-pruned form, similar to those of Mr. Rivers, in a deep alluvial loam if they were grafted on the Crab stock? It cannot be done. I have seen it attempted, however, and many such practices equally absurd, and yet the wonder was at the unsatisfactory results.

The judicious pruning or non-pruning of our fruit trees is an all-important study—more important by far than training, with which it must not be in the least confounded. Training is the producing of form, an ornamental part of the business, which is at times rather antagonistic to fruit-producing. Pruning, again, whilst it may assist training, is chiefly performed for the sake of the fruit. To prune a fruit tree is very different from pruning any other sort of tree; the production of fruit is much more difficult than that of timber or of ornamental form. It is easy to grow a tree to any given form or size, but to make that tree bear fruit in good quantity and of good quality requires the exercise of a little more skill and knowledge. Handsomely-formed trees are decidedly more pleasing in appearance than irregular ones; if, however, the one can only be obtained at the expense of the other, then, as fruit trees are cultivated for their fruits, form or style must in a measure give place to that which is most important. A fruit tree laden with ripening fruit is a far prettier object than a prettily-formed tree without it.

To prune is to cut off a portion of the stem or branches of a tree, and the object is to regulate the vegetation of the plant. The immediate effect of pruning, or the cutting-off of any portion of a plant, is the encouragement of a greater flow of sap towards the parts which are left. Thus, if a tree is growing vigorously and making strong unfruitful shoots, the effect of pruning it back severely is to increase vigour, instead of weakening the tree. All winter pruning, or pruning after active vegetation has ceased, results in producing greater vigour: therefore a vigorous healthy-growing tree requires less pruning than a weakly-growing one; yet the very opposite is the practice frequently adopted.

In fruit culture excessive vigour is undesirable, as such trees bear but little fruit; this, then, has to be modified, and the weaker ones encouraged, as it is possible for a tree to be too weak and produce too many small fruit as well as to be too vigorous and unfruitful.

Excessive vigour may in some instances be considerably repressed and fruitfulness induced by judicious summer-

pinching—that is, by pruning with the thumb and finger; indeed, if it cannot be done in summer, in many instances it is better not to do it at all, for, as I have already stated, winter pruning causes greater vigour. There are some instances where any amount of pinching will not induce fertility; the tree may be weakened by incessant applications, but that is all the effect produced. I have seen cases of this sort in very rich or damp soil. Root-pruning may be resorted to, but the effect is again the same; the tree is weakened for a time, but is shortly again as vigorous as ever. With such examples, the only practice to be recommended is to prune not at all; thin-out the shoots if necessary, but do not shorten any of them, allow root and branch to grow, and abundance of fine fruit will be the result.—ARCHAMBAUD.

(To be continued.)

STRAWBERRY CULTURE AND SELECTION.

Mr. "H. M. B.," Henley-upon-Thames, wishes to know what I recommend to be the treatment, from January to January, of his Strawberry plants well mulched last November. As soon as weather permits he should carefully remove all weeds without disturbing the superficial roots. Many, with the view of letting the sun's heat into the ground, fork their soil and destroy these roots, or many of them; and hence, though the plants may set their fruit well and present a good prospect, the berries do not come to perfection. There may be two or three moderate-sized berries on each plant, but those forming the main crop will be about the size of peas. The large number of superficial roots is the perfecter of the fruit. I never move the soil of the Strawberry beds deeply—a mere scuffle is given to kill weeds—from the time they are planted till the lines are broken up altogether. If ground is to be stirred deeply at all during the life of the plantation, it should be done immediately after the crop has been perfected, as the roots then wholly or in part die away, and new roots are emitted from the base of each plant.

Let us suppose March is in, and the weeds are carefully extracted. The next thing to do, if the new leaves are well developed, is to cut out the decayed leaves; and having done that, put some clean straw (barley straw is most easily applied), between the rows, and also between the plants, to keep the fruit from being dirtied. If slugs abound put down Cabbage leaves, fresh from time to time, and daily kill the slugs which conceal themselves under the Cabbage leaves. I practise this with my Peas.

If hoar frosts set in after the Strawberry plants are in flower, it is a good plan to hang "scrim" over them on sticks at night, and to remove it early in the morning. After the berries are set, if the weather is sultry, too much water cannot be put on from the time of the formation of the berries till the fruit reddens. As soon as this occurs give no more water till you have had the first picking, then water the plants again copiously, and so after every picking till the plants have yielded their whole crop. If runners make their appearance you must cut them off. If your plants are in high condition, and you want to make an early plantation—early establishment is a great point in this climate—you may peg two runners per plant into a pot, and remove them, as soon as they have rooted, into a cool place, giving them plenty of water both before and after removal.

I presume the ground is already in good order; still it is a good plan in winter or spring, supposing the rows to be 2 feet apart, to put liquid manure or guano, or guano and water, into the centre space; but be careful not to put strong fresh liquid manure, or guano, or strong guano water, near the plants. When the "tug of war" comes the rootlets will run out into the centre space, and find a supply to enable the plant to bring to perfection a heavy crop. I do not practise this, because my ground is always in the highest condition before I plant.

Let us suppose, then, that the crop is taken, and the runners (if you do not want runners keep them cut off—at any rate water the old plants), pegged and watered. The next thing will be to plant the new beds, which, to bear well the first year, should be planted as early as possible in July. The berries are largest in the first year, but the crop is the largest the second year, after which the plantation should be destroyed. Planted in July, the plants will then make from three or five to seven crowns, according to the sort and due attention. I always plant upon a stale fallow, after the destruction of surface weeds, and after the ground has settled naturally. At any rate, the ground must be trodden down, so as not to sink from the plants

As soon as winter comes with severity scatter a little horse litter, or other mulching, between the plants and over the surface between the rows; but take care to keep it flat, and do not let any of it cover the crowns, or lean up against them. Crowns bleached like Celery will not bear well. The Strawberry is very hardy, and if it could speak would sometimes say, "Save me from my friends." Do not keep sorts that want coddling in winter and shielding in summer. We have plenty of excellent sorts that want neither.

I give a list of the sorts here. They are Rivers's Eliza, Lucas, Mr. Radclyffe, Dr. Hogg, Cockscorn, Wonderful, Frogmore Late Pine, Bieton Pine, Royal Hauthois, old Red and White Alpine, Galande, and Red Alpine, the best.

I am surprised, so fond as many people are of Strawberries, that they do not cultivate largely and more generously the Alpines, which begin before any other, and keep on till September and October with a little assistance and abundance of water. They do well in a bed, commonly called a "lazy bed." I like them better than any other, as the flavour is fine, and they never cloy one. I like them when dead ripe *pur et simple*; but they are extra delicious when eaten with sugar and our rich vale cream, accompanied by a glass of sherry.—W. F. RADCLYFFE.

ACCUMULATED HEAT.

Some time ago I wrote an article under this heading in "our Journal," which I know attracted some attention. I was told by one of the best architects in the midland counties, that he not only believed my theory correct, but that as far as he knew it was original. I cannot without much trouble refer to the article in question, but I tried to prove that where a fire, kept hot night and day, passed through a space surrounded by non-conducting materials, this space must become dangerously hot; then, again, that wood constantly subjected to heat became in time so altered as to become highly inflammable; and, as a consequence, that many mansions where flues were covered by boarded floors and carpets must be unsafe, and were, in fact, often burnt down from this cause, months and years after the flues were first used. After giving several instances which had come under my own observation, I suggested that the fire in the Crystal Palace was in all probability caused by accumulated heat.

The more I have thought of this subject the more clearly it appears to me worthy of attention. What limit can we place on the accumulation of heat if constantly produced and unable to escape as heated air, or by radiation? Water, if prevented from forming steam, may be made red hot. If a hot flue be placed in an almost air-tight passage and surrounded by non-conductors, how is the heat to escape? If the fire be kept up night and day, must the flue not become hotter; and if the surrounding air cannot freely escape, will it not become equally hot? Under such circumstances the "over-heating of flues" becomes a necessary consequence, not necessarily the consequence of carelessness; but when the house, the family pictures, the hundreds of things which belong to home, and which can never be replaced, are consumed, the poor man who had charge of the fire is not in an enviable position. Some one of your numerous readers may say, All this you ventilated before, why write again on the same subject? The importance of the subject would, I think, be a sufficient excuse for reiteration, but my object is to carry the theory farther.

When writing the first article the idea struck me that, if the arguments were worth anything, even a pipe constantly filled with very hot water or steam might give rise to the danger of fire, and I could see no reason why it should not do so, but I durst not write it; nay, I even anticipated (this being raised as an objection to my theory. I expected some one would say, "If the theory of heat accumulating to a dangerous extent be true, then a steam or hot-water pipe might give rise to a fire." This, of course, would by many be considered as a sufficient refutation of my argument. I little thought that I should see proof of the power of both steam and hot-water pipes to produce fire within one day. I have a large Orange house 100 feet long and 30 feet wide. To the boiler of this house are attached 1500 feet of 4-inch pipes, and as 400 feet of these pipes pass under beds in which Vine eyes are growing, the flow-pipe is always very hot. This flow-pipe, at about 20 feet from the boiler, rises through the end of the bed to supply the top heat of the house, and in doing so passed through a mass of cocoanut refuse in which the Vine eyes were plunged. On Monday night last (February 15th), my foreman, on entering the house

about ten o'clock, smelt a smelt of burning, and found the cocoa fibre round the pipe red hot down to the slates. On mentioning this to the foreman of Mr. Foster's hothouse factory, he said, "Just come this way, sir," and showed me a steam-pipe passing from Mr. Foster's steam engine wrapped with a hayband to keep it warm. The surface of this band next to the pipe is quite charred, and no one seeing it can doubt, that if the mass of hay were thicker it would fire. As it is in the engine-room where there is no danger if it were to fire, I hope it will not be taken off, that those interested may see it. I hear from Mr. Jerram, the engineer of Derby, that Mr. Boden always says his warehouse, at Nottingham, was burnt down by a hot-water pipe, but it was thought necessary to account for it by a supposed shortness of water, or, as it was on the high-pressure principle, by the super-heating of the water. I cannot see how there could be a short supply of water in the boiler whilst there was a drop in the pipes, and on the latter supposition I think an explosion, not a fire, would have been the consequence.

To those who are unable to realise the idea of combustion without the contact of fire, it may be well to allude to the fact that a certain heat only is necessary to produce combustion. A piece of paper held before a hot fire will burn though it do not touch the fire. A stack of badly-got hay will fire; what is this but a case of accumulated heat? A moderate amount of heat generated by fermentation surrounded by a large mass of non-conducting substance, increases till the point of ignition is reached. How is it sought to be prevented? By providing or cutting a chimney to let out the heat and thus prevent its accumulation. I cannot help thinking it would be about as safe to live in a coal pit as in some gentlemen's well-warmed houses. Those who still think it impossible that a steam or hot-water pipe may cause a fire, will find it difficult to believe a river once burnt down a wooden house; quite as likely, they may think, as that I shall ever "set the Thames on fire," but the river Soar once performed this feat. The Soar in a flood once reached a wooden house in which lay a quantity of quicklime. The heat generated was sufficient to make some large nails red hot, and these fired the building.—J. R. PEARSON, *Chilwell, Nottingham.*

THE ALPINE ROSES.

I HAVE observed on more occasions than one the question, "How am I to grow the Alpine Rose, of which I have been sent some seed?" But what, then, is the Alpine Rose? Almost every visitor of Switzerland has at one time or other worn a hunch of it in his hat, descending to his hotel, after a walk in some of the higher Alps, with a certain feeling of superiority over those who had stayed at home; and some, perhaps, have never known that this plant, taking the place of our Heath at that altitude, is what you learned Latin-speaking Editors call *Rhododendron ferrugineum*, or *Rhododendron hirsutum*. The former is that which grows about Chamonix, the latter is generally found on the Oberland Alps, and both are perfectly hardy.

Now, as to growing these from seed gathered by oneself, no doubt most people would feel an interest in the little plants—that is, if most people are at all like myself, for I confess to have plants, shrubs, and trees, which I delight to visit, recalling to me as they do the spot where in days long gone by either the thing itself grew (a tiny little thing then), or the seed was gathered. In this species of *Rhododendron* there is little if any chance of obtaining varieties by seed, and as it grows most freely by cuttings or layers, which often blossom the first year, growing it from seed is hardly worth the trouble. A box of peaty soil, 20 inches by 10 inches, and 6 or 7 inches deep, will contain upwards of fifty cuttings, which, if taken off now with some old wood, will almost all grow unless treated too tenderly.

With the large-growing *Rhododendrons*, however, the case is very different. As a rule they do not grow from cuttings, therefore it is well worth growing them from seed; and if the seed be gathered from fine named plants in a large collection, there is every likelihood of having great variety in the seedlings. It is also a very easy and inexpensive way of obtaining a good stock where planting is required on a large scale, and the best kinds are now just as hardy as the commonest. Then there is an annually recurring interest each blooming season, as to what these children will be like, and if some should turn out the same in flower as their parents, a rare occurrence, I think

the foliage of a seedling is generally superior to that of a graft and there is no danger, as in the graft, of suckers unattended to doing any mischief; in fact, they are rather advantageous than otherwise.

I see advertised in "our Journal," a sale of two-year-old seedlings, at a very cheap rate, and for charity, too; and as I know few private collections superior to that from which the seed was taken, a purchaser of these would save two years' growth, and by getting a few every year, a constant succession of some new kinds might be looked for after the first year of blooming. The giver of these, I think, made a mistake in letting them go out the first and second year too small, and if I might make a suggestion, it would be that compensation for losses in these years might be encouraging to any of the parties ordering new sets now.

But all this in favour of seedlings must not be taken to mean that grafted plants or layers of the best kinds can be dispensed with; on the contrary, a few of the best kinds should be purchased every year from the best nurseries.

Many people, I fear, are deterred from planting *Rhododendrons* from an idea that peat is absolutely necessary for them; a trial will show this to be a mistake. With me they grow in almost any soil moderately retentive of moisture, where the sub-soil is granite; even in a rabbit sand of decomposed granite, where the common Brake Fern and Foxglove grow, they do remarkably well. They are growing vigorously, too, on the site of an old brick-kiln; but here, again, seedlings have an advantage, for if planted out at three or four years old they generally accommodate themselves to almost any soil. The mention of rabbits reminds me of one great virtue in the *Rhododendron*, it is not injured at all by those enemies to all improvement; indeed, cows or sheep will not touch the plants after the first leaf is tasted. Some day I hope to give the names of a few rabbitproof plants.—Y.

WINTERING PELARGONIUMS IN YORKSHIRE.

THERE are many ways of striking *Pelargoniums*, and of keeping them through the winter, but undoubtedly the best plan to winter these useful summer favourites is as follows.

Mr. Luckhurst must make allowance for the difference between the climates of Kent and Yorkshire. I have lived several years in the latter county, and have had a little experience in the winter management of this class of plants, and testify that the sooner one can put the cuttings in, the better is the chance they have of living through the damp and dull months. Certainly, for my own part, if there were plenty of conveniences, I should say winter them in thumb pots and keep them steadily growing; you have thus a better chance with them, as more air can pass between them than when they are stored in cutting pans. If any one wishes to see the sort of plants I mean, a trip to Shipley Nurseries, near Bradford, will at once convince him that a light airy situation with a cool dry temperature suits this class of plants to perfection. It would be wholly absurd to adopt in Yorkshire Mr. Luckhurst's direction for covering them over with thatched hurdles. However well the plan may answer in Kent, it will never do for any gardener in the north of Yorkshire, as he would find to his cost before one-half of the winter was over.

I have had stock plants of *Pelargoniums* in full bloom in a vinery at rest nearly all through the past winter. Of course there was a small amount of fire heat to dispel damp and frost; then there was air left on night and day. Watering was performed only on fine clear days, but this class of plants will do for weeks without it. The drier they are kept the better they stand the winter.—JOHN BOWLEY.

TRANSIT OF PLANTS TO ST. PETERSBURG.

YOUR contemporary, the *Gardeners' Chronicle*, page 191, gives a mode of transporting plants to St. Petersburg, and I take the liberty to point out to you a few errors. If it take ten days from Antwerp to St. Petersburg, it will take twelve from London *via* Antwerp at the least, and show plants will suffer. Also, Messrs. Smyers' dispatch by rail (if need be), from Revel or Cronstadt is impossible, as there is no railway from Revel, and Cronstadt is an island—*via* Oranienbaum might do—though I am quite sure, with the Emperor's will, a quick dispatch could be effected if a steamer had to unload at one of these places. I once myself witnessed (it was before there existed a railway between St. Petersburg and Moskova),

a train of 162 light carts, each carrying only one large package. Each had three horses, and they went with almost railway speed. I have pointed out (*Chronicle*, page 138), the best and cheapest way to send show plants to Russia *via* Hamburg, with only six travelling days. I have considerable experience in these things, having had the management of conveying one or two shiploads every year to St. Petersburg, containing plants previously ordered or sent on speculation.—FRITZ GERNARD, *Continental Traveller for Messrs. E. G. Henderson & Son.*

THE PORTABLE ORCHARD.

(Continued from page 123.)
APPLE, Pear, Cherry, and Plum trees will take no harm from exposure to the open air, always provided the wood is ripe; and proper pruning, secures that. The trees should remain potted as long as there is no danger of the fruit buds withering, and that is not till the severity of the winter is over; April is usually soon enough here, but the climate of each place must determine this point. In most places and seasons the end of February will be a good time, and we may safely assert that the limits will be the beginning of February and the middle of April.

When the pots are plunged in the ground they should be sunk up to the rims, and a good mulching of rotten manure given, extending beyond the pot for a foot or so all round, and if the weather has left the ground very dry it will be well to water the trees thoroughly a few days after they are plunged, but after that, unless the weather is very dry, they need no more watering. At the same time a good soaking once a week throughout July, with weak liquid manure, will give increased vigour; but I find the trees vigorous enough in my soil without this extra food, for the roots get fresh soil every season, and if the bed in which the pots are plunged is afforded a dressing of lime and manure at the lifting time in autumn, and the soil is left in good ridges during the winter, the trees have plenty to feed upon even when placed very closely together. This is, no doubt, one of the causes of the success of the system. Pyramids do not get the benefit of the fresh soil in this way, even if they become used to annual removal without feeling the check, for the soil could not be exposed to the action of the air during the entire winter; and trees potted in the ordinary way have not such a large space for their roots to run in during the summer.

Having now given a sketch of the general method of cultivating trees that are the property of the cultivator, I shall proceed to describe in detail the method of training them; and what I have to say about training and pruning applies to all forms excepting those for walls. As the number of trees to be cultivated in a portable orchard will in most cases be small, and the trees themselves will become potted, no irregular training should be permitted. A hundred trees could be very easily kept in perfect form by bestowing upon them the time too often spent in the public-house; for what is wanted is frequently going over them branch by branch, though very little is to be done to each at any one time. However, a hundred is a far greater number than I should recommend most men to attempt until, at any rate, they had gained some experience in the system, a score or a dozen, or fewer, will be enough to begin with.

GRAFTING.

Everyone ought to know how to graft, and, as I said before, an educated man starts with a great advantage over a labourer, and perhaps in no part of fruit culture is the advantage so great as in this, for a certain amount of quickness of thought and hand, as well as delicacy, are needed to graft well. Besides, every now and then a case occurs where a variety can be preserved in this way, when, if the opportunity is missed, it may be years before that variety can be met with again. It is an art that all boys should learn, though, judging by my own experience, they may at times practise it to anything, but the benefit of their friends. More than forty years ago I was taken by a gentleman, whom I was visiting, to see a lady who had an especial breed of shorthorns, and as her farm was to be explored, the disposal of my small person during the absence of the two became a difficulty, and I overheard some part of their discussion in which terms by no means complimentary to myself occurred. "Where can the mischievous urchin be put, so that he can do no harm?" being typical. At last they agreed to put me into a garden with a wall round it till their return; now I was not a particularly mischievous urchin, and resenting very keenly my treatment, I considered it a fair challenge to do my worst. Looking round the garden with malice prepense, I saw a young

Pear tree neatly trained against the house and lower than myself. I saw also bundles of withered Crocus leaves neatly tied up in the flower border, and not having been disarmed of my knife, I saw my revenge. In a trice I had made a spatula of wood, and had cut scions from all the Pear trees in the garden. I then set to work and budded the young Pear tree all over, using the Crocus grass to tie with, and cutting out every eye that naturally belonged to the tree. Several years afterwards I visited the place again, and asked the lady if she had a Pear tree at the end of the house by the drawing-room window. Immediately she told me that it was a most extraordinary tree; it was planted for a Jargonelle, or some such Pear, but instead of Jargonelles every branch bore a different sort of Pear. Many years again passed over my head, and this summer an old college friend and my wife and I went to see the old tree. Of course all things, especially the walls, seemed small compared with my recollection, but yet the house and garden were as I remembered them, and there was still the old tree, but more decayed than myself; three branches alone remaining, one being Beurré Diel, another Uvedale's St. Germain, and the other a Pear I did not recognise. Few persons, I suspect, have seen so large a tree of their own working as this, and still could hope to see fruit on other trees yet to be grafted. This anecdote, at any rate, will prove that boys may readily be taught to graft well, and that the apparatus for the purpose is simple enough.

It is always a difficult matter to explain on paper a mechanical operation that takes only a few seconds to perform, but I trust by means of figures to make the process clear; nevertheless, I advise novices to see some gardener at work, and then try to do the same with any branches of trees that come readiest to hand, for speed and neatness are nearly everything needed to secure success. There is wanted about as much nicety of hand in the operation as is required in making a pen, but greater accuracy of eye.

All grafting is performed by fitting one or more buds of one variety (the scion) to another (the stock), which is growing from an established root, and this fitting must be managed so that the living layers (the albumen) of the wood of both are brought into close juxtaposition, so that the cambium, or fresh deposit of living cells and fibre, may unite. Now, at present we know very little about what takes place in the cells of either, or how the stock and scion affect each other; nay, we have so few recorded results of grafting different varieties on different stocks, that the field for experiments is quite open in this direction, and beyond Mr. Rivers's published results we have little to guide us. Therefore I would urge all who are going to graft their own trees to make careful notes of what they do, for even failures become valuable when properly recorded, and no nurseryman can run the risk of such experiments unless he really cares more for science than profit.—W. KRUGGER.

(To be continued.)

FRUIT PACKING.

I consider "J. C. M.'s" mode of packing fruit not a good one, especially for Grapes. I could never persuade myself to employ moss to produce elasticity for fruits, much less to use baskets to carry them. No packer of fruit to any considerable extent can say otherwise than that the box, and paper shavings—such shavings may be purchased for £1 8s. per cwt.—are the cleanest, safest, and best way of sending fruit to any distance—from two to four hundred miles. I recommend thin wooden boxes with a wire hinge and fastening; the boxes to be of different sizes—viz., 6 inches deep for Lady Downe's, West's St. Peter's, Muscats, and Hamburgs, and an inch deeper for larger summer fruit; one layer of bunches to be placed in each box, and two boxes corded together. The paper shavings are all that is required, for nothing is cleaner or purer than these when procured from a first-class source.

Nectarines may be sent in the same way but in much shallower boxes to suit the diameter of the fruit; some shavings placed between each fruit will secure the Nectarines for any distance. Peaches, no doubt, require a single compartment for each fruit, and to be enveloped in wadding, but paper is unnecessary. Strawberries, I find, are best packed in shallow boxes to hold two layers; clean-cut Rye grass, or any other grass, provided it is 6 inches long and clean, being laid neatly as it is cut between each layer. Packing in punnets in grass and laying in boxes is also a safe way. No leaves are used to wrap the fruit in. I always prefer shallow boxes to deep ones. Two or three may be corded together, and in this way a con-

cession is less severe on the fruit than when a quantity in bulk is together.

Pine Apples, choice Pears, Bananas, and the like, travel admirably enveloped in the soft shavings, in boxes made to suit their size. Divisions, even, are not necessary.

Poplar or beech wood is the sweetest to make boxes with, but failing these use deal with as little resin as possible. I confine baskets, moss, and leaves to vegetables and out-door fruits as a rule; but boxes, paper-shavings, and wadding to in-door fruit; and, without these packing materials, in my estimation, fruit is not cleanly sent to its destination. The paper-shavings, at the price I have stated, are as soft as the paper I am writing on, and all pure white. Possibly the coloured kinds in a mixed state would be much cheaper and equally good.—H. R. F., *Floors Gardens*.

OUT-DOOR CAMELLIAS.

THE practical remarks of your Jersey correspondent on the cultivation of the Camellia out of doors (see page 104), induce me once more to call attention to this subject, and to offer such notes on it as the present season has supplied me with, especially as there seems to be some misapprehension with regard to the hardness of the plant and other matters, which cannot be too soon explained. At the same time, as seasons like the present do not occur every year, due allowance must be made for the advantages which the plant has enjoyed this winter as compared with an ordinary one.

The Camellia was proved capable of enduring the winters of this country very many years ago. The late Mr. Robert Osborn used to assert that it was harder than the common Laurel, and had some planted against the north wall of one of his buildings at Fulham, and there were few who, through a long life devoted to horticulture, looked more closely into the habits and characters of shrubs and trees than he did. I remember also some Camellia trees growing against the wall behind one of the glass structures in the occupation of the late Mr. Joseph Knight, at Chelsea, some years before that establishment passed into the hands of the Messrs. Veitch, and Mr. Knight's opinion as to the hardness of the Camellia was the same as Mr. Osborn's. Amongst private growers I believe the late Mr. Wells, of Redleaf, was amongst the first who planted Camellias out of doors to any extent, and I believe there are some good examples at that place at the present day, as well as many other shrubs of questionable hardness, which that enthusiastic patron of gardening was in the habit of trying in the open air.

Cotemporaneous with Mr. Wells was Mr. Hooker, of Brenchley, who at that time was a nurseryman, and he also tried the capability of the plant to withstand the many changes our climate is liable to. I believe his success was second to that of very few, if any, up to the time of his death in 1858, when his grounds, which had ceased to be a nursery some years previously, were denuded of many of their treasures, and a large Camellia of the old Double White variety fell into the hands of my noble employers. It was removed to Linton with as much care as could be, and certainly at the time it would have been difficult to find a plant of any kind in a more healthy condition, every point having a cluster of buds upon it; but as the removal took place early in March, it was thought advisable to take off a great many of them—between eight and nine thousand at once—still leaving sufficient for a crop of bloom. The outline of the plant was not unlike that of a well-grown Portugal Laurel—bee-hive shaped, and the dark glossy green foliage was so dense that it was impossible to see into the interior. This plant, I was told, had been about thirty years out of doors, and as this was prior to 1858, it will be seen, that the experiment is not one of recent date. I may, however, add that the removal injured the plant much, the more so as we could not furnish it with the same kind of soil it had been growing in; and although it has flowered more or less every year, it has not yet regained the robust condition it had when we removed it. The winters have had no effect upon it as a shrub, although they do exercise an influence in another way detrimental to its beauty, as will be shown below.

Being anxious to give the Camellia another trial as an out-door plant, and having some extensive alterations in hand, in the spring of 1865, I made up a circular bed of 10 or 12 feet in diameter, and planted it with a number of Camellias of different sizes that had previously been in pots. The natural character of the soil would rejoice most kitchen gardeners and

farmers, but from the unsatisfactory condition of the large plant before referred to, I roughly surmised it was not what they wanted. I therefore removed it, and replaced it with some turf soil from a dry hilly district. This soil was anything but prepossessing in appearance, and came, in fact, from a place where the very worst crops of hay might be looked for that could be seen for miles round. A plentiful addition of stones from the same place was made, and the plants turned out. Some of them died the first season, but most of them established themselves, including several that were not in good health at the time of planting: indeed, the failures mostly occurred amongst plants that had been recently imported from Belgium, and which I have found in other places do not always prosper under the changed treatment they receive at our hands. The deaths in the bed rendered some little change necessary in the following season, and of course any attempts at flowering were removed in the bud. The growth of 1866 and 1867 being satisfactory, a few flowers were furnished last spring, but not many. I was much afraid that the dry, hot weather of the following summer would have had a serious effect upon them, as water was too scarce to afford them any; but they endured it, and although one or two made a sort of second growth, the others ripened well and set their buds accordingly. One of these, an old Double White, than which I am not aware of any better variety, began to expand its blossoms early in December, and some as good white Camellias as could be desired were gathered before Christmas; what, too, is worthy of remark, not one seemed in the least to suffer from the almost continuous rain we had at the time. Clear white blooms were furnished by this plant up to the 20th of January, when we had a succession of frosty days and nights, the thermometer falling to 22° on one occasion. This, of course, destroyed all that was ornamental in the floral way; and although the buds that were advancing at the time opened, and expanded their petals, they were all severely injured by the frost, and stained, dirty-looking flowers were the result. These frosts ending on the 27th, and the weather having been since mild, the injured blooms have by degrees disappeared, and now (February 11th), I find there are some of as pure a white as can be wished, thus proving that it is the frost and not the rain that disfigures the flowers of the Camellia. Until the present season I was very sceptical of this being the case, never having so good an opportunity of witnessing the plant's flowering under such conditions as those in which it has done so this winter, and I hope that others having out-door Camellias will report their experience during the past unusually mild season.

The above remarks on out-door Camellias would not be complete without mentioning some anomalies connected with the present winter not easily explained. In the bed of plants I have mentioned, only one plant has expanded its flowers; the others, though not of the same kind, are very backward, while that which flowered did so before some of the kinds in a conservatory. Perhaps the fine weather we had in November had some influence in causing this result, as the Camellias under glass might be less benefited than those outside; but there was a rather sharp frost in November, the thermometer falling to 25° on the 6th. This frost, though fatal to bedding Pelargoniums and similar plants in many situations, was not sufficient to injure the swelling buds of the Camellia, otherwise the bloom of December would have shown the effects; but the long period without frost of any severity that followed the 8th of November, enabled the plant to go on blooming with really less check than it usually receives in spring; I might say even late in spring, for from the 8th of November to the 21st of January the thermometer sunk only on two or three occasions to 29°, so that the flowers that were partly screened by leaves sustained no injury—indeed, I may say that none of them received any. However, as stated before, all that were in bloom in the third week in January, and those in an advanced state, were spoiled by the frost, but during the last few days some uninjured buds have opened, and look as well as in-door ones, they not having been so far advanced at the time of the frosts as to be at all injured, or the frost not sufficiently severe at the time to penetrate them.

With reference to the inquiry how far it is advisable to plant this highly ornamental shrub out of doors, a qualified answer must be given. Every winter is not like the present, probably not more than one or two in a lifetime are like it, so that the success experienced this season is not likely to be repeated. Still the beauty of the plant as an evergreen justifies everyone who has a favourable situation trying it out of doors, and if it only partially succeeds now and then, a bloom so obtained is

held in more esteem than those produced under glass. A north wall is a good place for the plants, but I do not think they flower so freely in that position as when in the open ground. Those we have, though sheltered, are fully exposed to the sun, and the foliage of a healthy plant will endure it without the least browning. Those having a suitable soil and sheltered situation might try a few plants with advantage out of doors, shading them at first if they have been coddled under glass; a year or two must also be allowed to elapse before venturing an opinion on their not doing well, for the Camellia is a slow-growing plant, and perhaps more so out of doors than in, especially if it flowers freely. The out-door plants, therefore, must not be too hastily condemned for not keeping pace with the coarser-growing evergreens; indeed, I would advocate the Camellia not being in contact with them at all, but by itself, where its fine glossy foliage will at all times render it a highly ornamental object, much superior in this respect to the most choice of the Rhododendrons, which are, nevertheless, the most suitable company for it.

As so much has already been said on the character of the soil suitable for this plant, I need only add that its wellbeing while in a potted state is due to other causes than that of soil alone.—J. RONSON.

PEACH CULTIVATION.—No. 9.

INSECTS.—With good management such as I have recommended, the Peach will rarely be infested with insects; but with the most skillful and best of treatment the trees are sometimes attacked by them. The most common of the insects attacking the Peach are aphides and red spider.

Aphides are, perhaps, the most troublesome, and, increasing with astonishing rapidity, prompt means must be taken to check their advance. It is good practice to syringe, before the flowers expand, not only the trees but the whole wall, with the tobacco water of the shops diluted with six times its volume of water, and again after the fruit has set and begun to swell. More effectual applications are Gishurst compound, Fowler's insecticide, and Clarke's insect-destroying compound; they may be applied at all seasons, except two—viz., when the flowers are expanded, and after the fruit has begun to swell for ripening, without injury to buds, foliage, or fruit. Another good remedy is to syringe the trees, and dust them with powdered tobacco; but no means are so effectual as liquid applications, for however well powders may be applied they do not reach every hole and crevice so well as solutions forcibly syringed upon them.

Red Spider is to be kept under by syringing copiously, and upon its first appearance give a good syringing, wetting every leaf, with a solution of soft soap, 2 ozs. to the gallon, or one of the applications named above.

Ants are often very destructive to the ripe fruit. Their nests should be sought and destroyed, by pouring into them gas ammoniacal liquor, and if the base of the wall be sprinkled with guano in the morning, and a little before dark, vast numbers will be destroyed, or their ascent will be prevented. These destructive pests may be kept from ascending the wall by drawing a line of coal tar an inch wide along the base of the wall.

Earwigs are not less troublesome than ants. They may be trapped in pieces of bean stalk, cut into lengths of from 6 to 9 inches, and placed in different parts of the trees, blowing off those secreted in the stalks every morning into a bottle of water. Earwig traps are also good, but none are better than the old-fashioned pieces of bean stalk.

Of *Caterpillars*, the most destructive is that of the Peach Saw-fly (*Tenthredo populi*, so called because it is very partial to Poplar leaves). The eggs of the insect are deposited on the leaves at the end of April, and in a few days a green grub is hatched, which feeds on the foliage, and spins a web for its protection; it continues there until of a full size, and then passes to the ground, and forms for itself a cocoon, remaining until the following spring. It is to be destroyed by picking off the leaves on which the eggs are deposited, and burning them; but if this be not done the caterpillars must be hand-picked or destroyed by an insect-destroying compound. The caterpillars of the Figure-of-8 Moth (*Episema caruleocephala*) are very fond of the leaves, and may be destroyed in the same way. Occasionally the Plum Tortrix (*Tortrix Weberiana*) attacks the Peach, hand-picking is the remedy; and the Garden Chafer (*Anisoplia horticola*) sometimes feeds on the flowers and leaves. It should be taken and destroyed; but the sparrow is so fond of it, that if that and other birds are preserved, the

trouble of seeking for this destructive insect will hardly be necessary.

The *Garden Weevil* (*Otiorhynchus tenebrioides*), a diminutive black beetle, often does great mischief by devouring the buds, leaves, and young shoots. It hides all day in the crevices of the wall, and in the soil round the stem of the tree, and emerges at night. Hand-picking must be resorted to at night, by the aid of a lantern. The best remedy, however, is to remove the soil from the base of the trees and wall, and destroy the larvæ which feed on the roots. Salt sprinkled over the larvæ will destroy them, but it must not be left in the ground close to the roots, otherwise it will injure them, though a little salt is not injurious but beneficial to Peach trees.

DISEASES.—*Blistered Leaves* are very common on Peach trees in spring, and result from cold. The circulation of the sap receives a sudden check, the growth of the midrib is stopped, and the leaves become swollen masses, through which the sap does not circulate, or only partially so. It is a question of prevention rather than of cure. All that can be done is to pick off the worst leaves, and allow those least affected to remain until warmer weather, or till fresh foliage is produced; then remove every blistered leaf, for if one is left the blotch changes from red to brown, and sometimes mildew makes its appearance. The preventive is more effectual protection.

Mildew very frequently attacks some kinds of Peaches, Royal George, for instance. It is more prevalent on trees in poor, light soils, than on those in a strong loam. The preventives, in poor soils, are copious waterings and syringings, and in wet soils where mildew not only attacks the trees, but the shoots die back in winter, lifting and planting nearer the surface, and taking measures to prevent the roots going down into a bad soil, and too deep. Dusting with flowers of sulphur the plants attacked, on the first appearance of mildew, will destroy it, and the dusting must be repeated whenever the disease reappears.

Gumming is the worst form of disease to which the Peach is subject. It is a result of planting in too rich soil, and of allowing a large quantity of wood to be produced and then suddenly removing it. Some plant in soils so rich that very long rampant growths are made, and these are cut back at the winter pruning to so many stumps, whereas a vigorous tree ought by careful summer training to be so regulated that little or no winter pruning will be necessary. The only cure is to take up the trees and replant them in more suitable soil, or, if the trees are much gummed, to replace them at once.—G. ABBEY.

DENDROBIUM SPECIOSUM.

As this shy-flowering Orchid is very seldom seen in flower, I send you an account of one that is in full bloom in the stove at Penllergare. The plant is growing in an 18-inch pot, and is 3 feet 6 inches in diameter. There are twenty-two spikes of bloom upon it. On the largest spike there are fifty flowers, and on the smallest twenty-five flowers. It flowers almost every year, having missed flowering only three years out of the last twelve. The house in which it grows is kept at a temperature of from 50° to 55° in winter, and from 60° to 70° in summer. I give very little water to the plant, but syringe the pot and roots daily during the hot weather, and admit plenty of air when the weather allows.—JOHN NUNNS, Penllergare Gardens, Swansea.

NEW BOOK.

Cottage Plans. Dedicated to the Landowners of Carmarthenshire and Pembrokehire. By JOHN FREDERICK VAUGHAN, Earl of Cawdor. London: W. Ridgway.

This volume might have been appropriately dedicated to the landowners of the British islands, for in every county may be found landed proprietors with disgraceful and degrading cottages on their estates—disgraceful to the owner, and degrading to the tenant. We commend this volume to the attention of landed proprietors, for it gives plans and specifications showing how to erect an excellent cottage for £72; so that a rent of 1s. 6d. a-week would be a good return for the outlay. To this consideration is to be added the superior one, that a comfortable, decency-securing home, is a fundamental requisite in rescuing the parents from bad habits, and the children from immorality.

CHIMONANTHUS FRAGRANS AS A BUSH.—In THE JOURNAL OF HORTICULTURE for January 14th, "R. F." says, "We have

never seen the *Chimonanthus fragrans* do well except against a wall." In Devonshire, a few miles below Torquay, I have seen it as a bush doing remarkably well, and in the winter flowering beautifully.—ALBERT RUMMELS.

MARKET GARDENING ABOUT LONDON AND PARIS.—No. 5.

GENERAL MANAGEMENT OF CROPS.

ARE the French market gardeners superior to the English? is a question that has been much debated of late; it is one to which different replies are given according to the prejudices, and, indeed, I may say the ignorance of the persons by whom the question is put or the answer given; and it is one to which I have endeavoured in the course of these papers to give a fair and rational answer. I have, therefore, thought it worth while, before passing on to consider the much-agitated fruit question, to say a few words on the different methods of cultivation pursued by the French and English market gardener, and whether—for after all that is the main question—one gets more out of the ground than the other. As to the value of trenching, deep digging, and manuring the ground, there is equal importance assigned to it in both countries; and as in London, so in Paris, the omnibus and cab yards afford the great supplies of manure which are needed alike in both. I do not, however, think that the Frenchman works his ground so much as the Englishman, his method of culture necessitating less of this hard labour than ours, while a large portion of his time is taken up in the watering that his warmer and drier climate renders necessary. Here let me say that much unnecessary hard hitting has been made on this very subject of climate; it is very true, as I have already said, that the average summer heat of Paris is not more than 2° in excess of that of London, but see what that does, combined, as it is, with greater sunlight and dryness. One of the commonest out-of-door crops in the market gardens about Paris is the Cantaloupe Melon; and what measure of success should we be likely to have if we attempted this in England? Or, again, take Tomatoes. We cannot grow these in our warmest seasons except near to or against a south wall, paling, or bank; while about Paris they require no such adventitious aid. So that, although I do not claim for the French the enjoyment of a paradisaical climate, I do maintain that they have one which in many respects, and most decidedly in that of fruit-growing, gives them an advantage. I do not say that it helps them so much in vegetables; indeed, it makes the production of many crops a very laborious matter, as the watering pot has to be constantly going.

As far as I could see, the great aim of the French market gardener is always to have a crop on the ground which is marketable. Well, people may smile and say, "We all desire that." But what I mean is just this: If you go into a market garden, say Mr. Myatt's at Deptford, or Mr. Bagley's at Fulham, you may see whole quarters planted with young Cabbages, and it must be some weeks before these become marketable; when they do, they are rapidly cleared off, and the ground is then filled with another crop. So, again, you will see perhaps half an acre of Radishes; they are soon marketable, the ground is cleared, and immediately another crop is put in—perhaps Lettuces, to be worked off in the same way, and then to be succeeded by Celery, the ground between each operation being well worked. Now, the French market gardener does not act thus. He grows two half crops on the ground, one of which he is sending to market while the other is coming on; not in the way of mixed crops, as some people will persist still in doing, sowing Lettuces with Onions, and thereby spoiling the growth of the latter, but in regular lines. Thus, for instance, a bed 4 feet wide is marked out by cross-lines; the lines themselves are planted, we will say, with Lettuce, and the spaces with Onions. The Lettuces are coming in for market while the Onions are growing; and as soon as the Lettuce is off Chicory will be planted in the lines, the Onions will be pulled, and another crop planted. Thus whole quarters are not cleared off at once as with us, and the ground generally appears cropped; but, as I have said, it is after all two half crops instead of one whole one, and I think it is very questionable whether this after all does give as good a return to the grower as the English system.

Watering forms a large item in the expense of a French market garden, and the appliances for it are very cleverly arranged. There is a large well in each garden, whence the water is drawn up into a tank, and from thence distributed in

pipes over the garden. In various parts there are large tubs sunk in the ground, into which the water flows, and these are kept full. Early in the afternoon of each day when the weather is dry, the men set to work; they take off their *sabots*, tuck their trousers up to their knees, take two water cans, one in each hand, and set to work with a will. Now, these clumsy-looking water cans are apt to excite a smile, and I must own to having myself laughed at them; but it was not until I saw them used at Dupont's that I found how exactly they are, in shape at least, suited for their purpose. Here is a rough sketch of one. When François or Auguste go to the tank they lay hold of the top of the handle, dip their cans into the water, fill them, and hurry off to the bed to be watered; they then very cleverly give the can a sort of lift, let go their hold of the top of the handle, and seize it lower down; this, of course, throws the can downwards, and so they empty it without ever placing it on the ground, and they water away with both hands at once. There is great economy of time in this, so that, clumsy as the article appears, I believe a man could water a piece of ground in much less time than we could do.



Another point on which the French gardeners seem to me to lay great stress is the use of frames. These are not neat, well-put-together affairs, but simply rough, unplanned boards with a light. Under these the Melons are placed, and when fear of frost is over the lights are taken off. These frames are also used for forwarding plants of Chicory, Lettuces, &c.; and sometimes when the Melon fails, which it occasionally does, Lettuces are regularly planted, and owing to the quantity of manure come on very quickly, and are very crisp and juicy.

There are some market gardeners, for example, Fromert at Montrouge, who are called "*primeurs*," for they give themselves up entirely to forcing both fruits and vegetables. Their places are very interesting, but do not, I think, call for any separate notice. The Asparagus is forced, not, as with us, by taking up roots and bringing them into a house or pit, but by placing frames over the beds with an inclination towards the south, using large quantities of stable manure between each bed, and covering the beds to keep out frost when it is severe.

I must say in another paper something on the culture of the Mushroom, especially those wonderful beds in the subterranean excavations of Montrouge, and then I must pass on to the *questio verata* of fruit culture, of which, as I have no preconceived opinions, I hope to be able to treat impartially, and to place the matter in a clearer light before those who, not having seen, may desire to know something of the merits of the case.—D., Deal.

NOTES AND GLEANINGS.

Hrs Grace the Duke of Buccleuch, K.G., President of the Royal Horticultural Society, has named H.S.H. Prince Teck, Lieut.-General Hon. C. Grey, Mr. W. Wilson Saunders, F.R.S., and Mr. James Bateman, F.R.S., as Vice-Presidents for the present year.

We have received from Mr. Meredith, of The Vineyard, Garston, near Liverpool, two photographs of some noble bunches of Grapes he had the honour of exhibiting before Her Majesty, the Crown Prince and Princess of Prussia, and other member of the Royal Family at Osborne. There were in all twenty-one bunches of Muscats, Alicante, Gros Guillaume and others. The largest bunches of Gros Guillaume weighed from 8 to 10 lbs., the Alicante 3½ lbs., and the Muscats from 3 to 4 lbs. It was at the expressed wish of Her Majesty that these should be photographed, and these here referred to are the copies that were taken. The groups are certainly very fine.

We regret having to record the death of Mr. GEORGE

JACKMAN, senr., of the Woking Nursery. He died suddenly, from suppressed gout, on the 12th inst. He was in his sixty-eighth year.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the weather has been particularly open and mild up to this time, all trenching, rough-digging, gravelling walks, &c., ought to be pushed on as fast as possible. Where draining is necessary, now is a good time to proceed with it. While agriculturists are so much alive to the benefits it confers, it is strange to hear gardeners lamenting over their pining Peach and Nectarine trees and bad crops, and making no effort to strike at the root of the evil. The very worst soil and situation may be improved by drainage, and wall trees of all sorts rendered fruitful by artificial borders. Now is a good time for burning and charring all the prunings of trees and shrubs. Where ground has been trenched, re-trenched, and poisoned with dung, charred earth and wood in good doses have a wonderful effect in restoring fertility and keeping grubs and slugs in check. Asparagus beds should be soiled or manured as soon as the ground is dry enough for wheeling. Cauliflower flowers, make a fresh sowing in the frame, and prick out those already up. Onions, about the second week in March is an excellent time to sow the main crop. We all know that drill-cropping is considered, and justly so, a step in advance of the old broadcast mode. To every rule, however, there is an exception, and having tried Onions by both modes, I am persuaded that the broadcast plan in beds of 42 inches in width, is superior to all others when the subsequent operations are properly carried out. One of the prime objects of Onion cultivation ought to be to secure an early harvest (a late and gross crop is almost sure to be stiff-necked and keep badly), and this is accomplished by elevated beds, unmanured, unless the soil is excessively poor. The land should be trenched and lay in ridges until early in March, when, being levelled down, it is marked out in beds 42 inches wide, with 15-inch alleys. Before the seed is sown, the beds are raised by soil from the alleys 9 inches above the ordinary ground level. When the beds have become very dry indeed the seed is sown, and the ground is trodden twice over until the bed appears as hard as a gravel walk. A very thin coating of soil is then strewn evenly over the whole, and finally the roller is passed over the bed. When the Onions are fairly up they are weeded at two distinct operations; not a weed being left at the last one, and they are thinned out at two different periods, leaving them finally about 3 or 4 inches apart. Plants thus situated, having a greater depth of soil than usual, acquire a more sturdy habit than those highly manured, whilst the elevation of the beds enables the heat of a warm July sun to penetrate a considerable depth into the earth, slightly checking late growth, and, of course, promoting early bulbing. Potatoes, plant on a warm border.

FRUIT GARDEN.

In the case of trees recently planted it is a good plan to place a piece of fresh-cut turf over their roots. Decide on the system of training, and prune accordingly. The height of the wall and amount of space laterally should be early considerations. Prune Raspberries, and any Gooseberries and Currants not previously pruned should be forthwith attended to.

FLOWER GARDEN.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller. If any alterations still remain unfinished, every available hand should be concentrated on this work, so as to have it completed while the weather is favourable. Look over beds planted with bulbs, and where necessary stir the surface, so as to keep it open and friable. Cuttings of Hollyhocks should now be slipped off old plants with a heel, planted in very sandy soil, and afforded a gentle bottom heat, keeping the leaves as cool as possible, and they will be found to root. Carnations and Picotees must now have attention. For growing purposes nothing is better than two parts of sound virgin loam, one part of rotten horse manure, and one part sharp river sand; in this, with occasional doses of weak liquid manure during the growing season, they succeed most satisfactorily. Seedling Pansies in beds should be gone over carefully, the surface stirred, and a dressing of manure put on. American plants may be moved. It is often dangerous to remove Rhododendrons in the winter, as their delicate fibrous roots are liable to be killed by severe weather. Where the natural soil is not favourable for the growth of Rhododendrons, an artificial soil may be gradually formed by sweeping

the fallen leaves over their roots, and covering them with sand every season.

GREENHOUSE AND CONSERVATORY.

Among other important duties which belong to this early season, that of attending to the multiplication of certain plants by seeds is not the least imperative or interesting. There are many seeds of exotic herbaceous plants that should be encouraged to germinate early, that they may receive the full benefit of the summer, as it assists them to attain a degree of maturity which enables the latter to withstand the gloom and severity of an unaccustomed winter. I recommend the sowing of exotic and other seeds generally during the present and following month. As hybridisation is beginning to be better understood and generally practised, doubtless additional attention will be bestowed on the propagation of plants by seeds. It is a matter of importance to the anxious grower to flower his plants in the first season; with many things it is only by sowing early that he is enabled to attain this result. Pelargoniums should be sown immediately, and kept growing from the moment they vegetate, to insure blossom in the first year. As most seeds germinate under similar circumstances, a pill might be appropriated exclusively to the purpose. Beyond regulating the amount of heat and supplying the seed pans with moisture, no extraordinary care is required; rich soil for seeds is not recommended. The character of the plant should determine in a measure the selection of soil. The admission of air on all favourable occasions will contribute to health and keep the various flowering plants in unimpaired beauty for some weeks. Hyacinths, Tulips, Lilacs, Cytisuses, Azaleas, Cinerarias, Deutzias, Rhododora will lend beauty and fragrance to the various groups. Kennedy's Marryat is a charming greenhouse plant, and valuable for blossoming at this season.

If the tubers of Dahlias have not yet been put to work, they must be looked over, and such as are decayed removed; young plants as soon as firmly rooted should be potted-off, again placed in heat until they are well established, and then removed to a cold frame to harden them off. Sow seeds of Mignonette, Ten-week Stocks, Cockscrobs, Balsams, and many other tender and half-hardy annuals. Give air freely to plants such as Verbena, Scarlet Pelargoniums, &c., in store pits, and carefully remove all dead leaves. Neapolitan Violets must be uncovered on all suitable occasions. — W. KEENE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

On a dry day ran the Dutch hoe among growing crops of Cabbage, Lettuce, and Spinach. Planted more Potatoes, sowed Peas under protection for transplanting, and turned over ground intended for Onions, Carrots, &c. Gave plenty of air to Potatoes, Radishes, Carrots, and other crops in frames; sowed more Dwarf Kidney Beans; potted-off young Cucumber and Melon plants in a frame; took up some more Rhubarb and Sea-kale to be placed in the Mushroom house; and set some common pots over crowns of Sea-kale out of doors, placing hay inside the pots, so as to leave an open space in the centre for the Kale to rise in. The hay next the sides of the pot inside protects alike from burning sun and severe frost. The weather has been remarkably mild, but we are not yet out of danger. Everything is so forward that a severe frost will do much injury, and we must provide against contingencies. Cleaned the surface of Mushroom beds, and earthed down another piece. We find that some rats have eaten out the hearts of Cauliflower plants.

FRUIT GARDEN.

We find a number of Gooseberry bushes quite dead; this we attribute to the dryness of last season. They were all healthy enough last summer. Fruit rooms this winter have wanted much looking after. We had heavy crops, and of a fair size, but the swelling must have been too rapid after the rains in autumn, and hence, we presume, in many instances the premature decay. We had some pyramidal Plum and Cherry trees perfect pictures a few days ago as to fruit buds, but though we have scarcely seen any birds, these managed to clear off a good portion one afternoon, there being no workmen about. We have syringed the trees all over with lime, and soot wash—rather too much of the latter, as the whitish appearance deters the birds. The Cherries were netted, but scarcely any net will keep out a tomtit, and even a bullfinch and a sparrow will find

their way inside. As soon as a net is seen, curiosity leads them to investigate what is to be found beneath it. We were obliged to follow with washing Pear trees, as birds had begun to rip open their forward fruiting buds.

The trees are more forward in the orchard houses than we like, and but for having lots of plants not over-hardy inside of them, we would leave them open night and day, and would be glad of a little frost to keep the trees back a little. If we have very bright weather, in addition to all the air possible, we will dull the glass with a little whitened water. The trees in the Peach house are in bloom and setting, and look all the better of the sun we have had since the 13th. Given a low temperature at night—from 50° to 55°, a rise of 3° or 3° during the day, if dull and wet, and of 10° or 15° if bright and sunny, and a sunny day or two every week while the trees are in bloom; other things being favourable, there need be little doubt as to a good crop setting. Gave air in fine days freely to Vines breaking, the temperature at night being from 55° to 60°, with a good rise from sunshine, and air given early. Figs receive treatment similar to that given to the Peach trees. When the fruit shows, it is often advisable to nip out the point of the terminal bud. This checks more elongation, and sends more strength into the young fruit.

ORNAMENTAL DEPARTMENT.—If we do not have a very severe frost, never has a better season been known for planting, and on this account we are busy with plantations, covers, &c. We notice that the earliest-planted trees are moving at the tops, and on examining carefully some Spruce, Laurels, and Larch planted in November, we find they are pushing out nice healthy white fibres. This is not at all surprising when we merely glance at the weekly meteorological table in "our Journal," and notice the temperature of the earth at only a foot from the surface. That little table is one of the most valuable contents of the serial. We used to keep such lists carefully, and such notes are excellent for giving young men habits of attention and observation. We have given up the habit of late years, partly from wishing to be free of the labour, and chiefly because these weekly tables were prepared with such accuracy.

We have good hopes of what trees we plant now doing well; but they run greater risks than those planted in the autumn when the ground was considerably warmer than it is now. Of three seasons—late autumn, midwinter, and late spring, we think midwinter is likely to be attended with most casualties. In the beginning of November and onwards, in such a season as this, the ground is warm, and there may be enough of showers expected to keep the top wood well swelled out, whilst the fibres are beginning to form to meet the wants of the bursting buds in the spring. In March and onwards there is danger, it is true; but the buds are then soon excited if not actually well swelled; and in favourable circumstances, as these develop, they encourage a reciprocal action in the roots. Even last season many thousands of trees that were planted late swelled and opened their buds, and would have lived had there been a showery spring, instead of a spring and a summer so distinguished for their dryness that in making holes in a field a few days ago, the ground was really dryer after all our heavy rains. In midwinter, say from the end of December to the middle of February in ordinary seasons, fresh-planted trees lifted in the usual way are placed in this unfortunate position, that both roots and buds remain for a long time in a state of rest; and when roots do not soon, when lacerated by raising them, begin to grow, they are very apt to go the other way, and begin to rot and mildew. In such a case, when the buds break and use up the stores in the wood, there is no reciprocal action in the dead and diseased roots, and the plant dies.

Whilst on this subject we must once more advert to two elements of success. First, After the soil is properly packed about the roots, let it be made firm, especially at and some distance from the surface, so that the wind, by moving the head of the plant, shall not cause the stem to make a hole round itself. Secondly, In securing firmness beware of the error of most young planters, planting too deeply. All young trees, especially of the resinous tribes, should never stand much deeper than they did before planting. In other words, the collar of the plant should not be buried. The collar, technically speaking, is that point whence the roots descend and the stem ascends. We have known hundreds of hardwooded trees, as Oaks, ruined by too deep planting. This is one reason why so many trees send a straight bole out of the ground. When the collar of a plant has fair justice, and other circumstances are favourable, the stem should look like an elegant column, with a

swelling pedestal at its base, and there can be no two opinions as to the difference in elegance and in a picturesque point of view. Fastening a young Oak of 3 or 4 feet in height, 3 or 4 inches deeper in the soil than it stood before, will be almost as injurious as heaping 18 inches of soil round the stem of a vigorous young tree of 30 or 40 feet in height. We once saw some nice young Oaks that dwindled away and died, because in some alterations earling was saved by placing nearly 2 feet of soil round the stems and over the roots. If the stems had been left clear the matter would not have been so bad perhaps; but even the heaping the earth over the roots was very injurious, as depriving these roots of air, and for a considerable time of moisture. Many who will readily believe that the finest tree will soon succumb if a heap of hot dung is placed round the stem, are slower to believe that a mound of common earth placed round the stem will, in the long run, be equally destructive.

Turfing.—For this work there could have been no better season, and what was first put down looks like an established lawn. It is always a risk to lay turf late in the spring, as much more labour is wanted to keep it neat and free from cracks. Turf, it is true, may be laid at any time, when extra labour is given. We have laid it with success in burning weather in the dog days, but then we had it taken up thick, soaked it in a tub before laying, and, after beating and rolling, strewed some fine earth along the joints, and allowed it to remain for several weeks before brushing the whole off, a plan that answered the purpose, but the labour was almost doubled.

Florists' Flowers.—But for what may come, Carnations might now be planted out. It may be as well to wait a little longer, giving them all the air possible, and keeping them from too much wet. Where there is a protected place those intended for pots may be potted. Tulips, Hyacinths, Pinks, and Pansies should have the soil firmed against their stems, and the ground between slightly stirred. Those fine old plants, the Auriculas, are more forward than usual, and if there is any appearance of worms in the pots, or want of drainage, the ball should be carefully examined, replaced in the pot, or in one of a similar size, and then be top-dressed, which is best done by moving away carefully a little of the surface soil, and adding a rich compost of fibrous loam and rotten cow dung well sweetened. For Auriculas, Carnations, &c., care should be taken to see that there is no spawn or mycelium of fungi in the dung, or even in the soil. If there is, it is advisable to expose the soil to a high temperature, in a furnace over an oven, or by the side of a fire, afterwards exposing it well to the air, and adding a sprinkling of water to make it just moist enough to handle. We have placed such dung, &c., in hot water for ten minutes and then dried it, but that takes away more of the nourishing properties than merely heating the soil and exposing it to the air afterwards, and more time is required after the wetting before the compost is sweet and fit for use. As a general rule such care may not be required, but of late years we have been troubled with the mycelium of fungi in leaf mould, hotbed manure, cow dung, and sheep's dung, and we know of many cases in which mischief was thus done. For choice plants a little supervision and examination can at least do no harm.

For amateurs who do not use a great amount of compost in a twelvemonth, where sods can be obtained, and when they have a few barrowloads of prunings from the garden, it is no bad plan to set fire to the heap, and when well alight pack the sods grass side downwards over the burning heap, for doing so will remove nearly all danger in this respect; and if such sods are well aired before use, they will be improved rather than injured for all potting purposes.

Window Gardening.—Where bulbs could be obtained, plenty of Crocuses, Tulips, and Hyacinths will now be coming in. The window is the place for them, and not the table or the mantelpiece. We do not believe that the Hyacinth gives out its richest aroma unless in the light, and how miserable and woebegone do the lanky leaves look when they lengthen in a shady place. Cytisus, Coronilla, &c., will soon be in their glory. The beautiful *Fuchsias* slightly pruned in the autumn, and kept in any out-of-the-way place free from frost, will, owing to the mildness of the weather, be now breaking their buds. Such plants for windows should not be large, should not be in pots above 6 inches in diameter, unless, indeed, you wish a specimen to fill the window, and they will bloom all the more freely when the numerous small side shoots are not too much cut back. The best time to reshift such favourites into fresh soil is when the fresh shoots have broken, and have pushed about an inch in length. By the time these shoots were less than

half an inch in length the plants should have been washed or well syringed all over, and then removed from garret, cellar, or kitchen, to a place near the window. If the soil is rather dry when you come to repot, you may shake the most of it away, if you can do so without hurting the roots. If there is danger of losing any young fibres, and you would rather have the advantage of fresh soil, a good plan is to take the ball in your hands, wash the earth carefully away in a pail of water, and then place the roots in another pail of clean water at about 60° for a few minutes; this will secure the roots being all supplied with liquid, a better plan than soaking the soil of a new-potted plant too much. After such potting the plant should have light, but not bright sun for a few days, and a sprinkling of water over the top from a clean hair brush will be better than too frequent waterings at the roots until these are working freely in and occupying the soil. The reason for potting at such time and in such a manner is found in the simple principle that it is never advisable to give a double check to a plant when you can gain your object by giving only one check at a time. For instance, it is never desirable to prune in or cut down a plant, and repot or transplant it at the same time. When you have what pruning you deemed necessary the roots were left in their entirety to make the beginnings of the fresh shoots, and as soon as these were growing the plant would stand better under house treatment the little injury done to the roots in repotting, as, provided these little shoots were kept growing, they would act reciprocally on the roots, which would grow afresh, and in the new soil strengthen the young shoots.

We may also add that the Fuchsia affords an excellent chance for gaining experience in propagation, as similar principles apply to most plants. Pruned and managed as we have supposed the Fuchsias to be, there will be more young shoots than will be wanted, and when these shoots are from 2 to 3 inches long they are just in a nice condition to strike root as cuttings. Slipped off close to the old stem, so as thus to be a little firm at the base, they will strike placed round the sides of a pot in a window, especially if shaded a little, or covered with a funnel of thin paper, when the room is hot and dry, or the sun bright. If there is a propagating case, as referred to last week, the cuttings would root well in a quarter of the time. When there is no case, one of the best and simplest modes for those with humbler means is the following: Take a 5 or 6-inch pot, put in the bottom from 1 to 2 inches of drainage; place soil and sand as stated last week, but have the sand for receiving the cuttings, according to the size of these cuttings, 2 or more inches below the rim. Insert the cuttings close to the side, as stated last week, and place a small square of glass across the mouth of the pot. These little squares will cost a mere trifle at the glazier's. This at once secures a still atmosphere about your cuttings, and in the brightest sunshine you will scarcely need any shade, except a piece of paper. In very cold days you can heat your pot a little by pouring hot water into the saucer, as that will rise no higher than, not so high as the drainage, and therefore will only affect the soil, &c., inside by the conducted heat. In a bright day the pot with its glass square becomes a little hotbed or pit, and more especially if the pot is turned round, so that each side in succession may receive the force of the sun's rays.

A better plan still would be to place the cuttings in a small pot drained, &c., but filled, and then put that into a larger one. The pot might then be placed for heat near the fireplace at times. We knew a hard-working man, whose occupation was a sedentary one, who was a very successful Cucumber-grower. Whilst his Cucumber bed was getting ready he sowed his Cucumbers in-doors, keeping the pot close to the fireplace until the seedlings appeared. In cold weather he heated the outside pot by placing it on the hob, and then set the pot, covered with a square of glass, in the window. When the plants required potting-off they were put in warmed soil in small pots, and these again in an earthenware pot partly filled with sand and about 15 inches in diameter, covered with a square of stout glass, which cost, we believe, 4d. The sand when heated retained the heat a long time, and thus nice stubby plants were reared. Air at first was given by merely placing a peg under the square of glass. These plans will answer when directed by enthusiasm, but they are not so good as the simple wooden case. However, simple as they are, we believe they are calculated to afford pleasure, and open up new fields of thought and inquiry to thousands of hard-working men, who must foster their love of nature in general, and of gardening in particular, as they ply their usual occupations in the rooms of towns.

From loom, and last, and seam, and ledger it would often be a relief to investigate even in a window the phenomena of vegetation, and experience that peculiar pleasure that can only be realised by those who do everything their pet plants require with their own hands.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 24.

THERE is so little change here that any alteration is scarcely worth quoting. Pears are almost over for this season, but we have abundance of Apples, good sorts, however, realising fair prices. Hothouse Grapes and Pines are quite sufficient for the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	2	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	8	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears (dessert).....doz.	4	0	8	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	8	0
Figs.....doz.	0	0	0	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries.....oz.	3	0	0	0
Grapes,Hothouse.....lb.	8	0	10	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	2	0	4	0
Beans, Kidney.....hd.	1	0	2	0	Mushrooms.....pottle	1	0	1	8
Beet, Red.....doz.	2	0	3	0	Mustd. & Cress,pennet	0	2	0	8
Broccoli.....bunch	1	0	2	0	Onions.....bushel	6	0	8	0
Brus. Sprouts ½ sieve	3	0	3	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	0	0	0	0
Carrots.....bunch	0	4	0	8	Potatoes.....bushel	4	6	6	0
Califlower.....doz.	1	6	4	0	Kidney.....do.	4	0	7	0
Celery.....bunch	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	1	6	8	0	Rhubarb.....bunch	0	6	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	8	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	8
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Horbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bunch	3	0	5	0	Turnips.....bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

John Scott, Yeovil, Somerset.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Sutton & Sons, Reading.—*Sutton's Farmers' Year-Book and Select List of Farm Seeds.*

TO CORRESPONDENTS.

BOOKS (Reader).—There is no work on the separate subjects you mention. Keane's "In-door Gardening" includes them and the hothouse also. You can have it free by post from our office if you enclose twenty postage stamps with your address. You are right in considering "cod-liver" plants the most fatal of treatment.

THE CHEDDAR PINK.—"Your correspondent, 'T. J. W.' may succeed in obtaining the Cheddar Pink by writing to the parish clerk of Cheddar. A few postage stamps enclosed would enable him to obtain some seed of a villager either now or in the summer. I obtained some from a villager there many years ago, and grew it for twelve or fourteen years.—C. E."

TIME FOR SOWING FLOWER SEEDS (Country Subscriber).—If you will enclose twenty postage stamps with your address, and order Keane's "Out-door Gardening," you will have it sent free by post. It contains, we think, what you require.

HYBRID PERPETUAL ROSES (Mahlon Moon, Morrisville, U.S.).—"As I am not asked to correct the list, but merely to add such Hybrid Perpetuals as are good, I add the following:—Alfred de Rougemont, Baronne Pelletan de Kinkelin, Black Prince, Charles Verdier, Comte de Nantenil, Dr. Andry, Duc de Cazes, Exposition de Brie, Francois Lacharme, Gloire de Ducher, Glory of Waltham for a pole, John Keynes, Jean Goujon, Lady Suffolk, La Duchesse de Morny, La Ville de St. Denis, Lord Clyde, Lord Macaulay, Madame Alfred de Rougemont, Madame Charles Wood, Madame Emile Boyan, Madame Julie Daran, Madame Knorr, Madame Vidot, Mademoiselle Annie Wood, Mademoiselle Marguerite Dombraun, Marie Baumann, Monsieur Noman, Prince de Portia, Mrs. W. Paul, Princess Mary of Cambridge, Souvenir de Jamin, Souvenir de Comte Cavour, Souvenir de la Reine d'Angleterre, Thorib, Triomphe de Paris, Vicomte Vigier, Baron Gonnella, very fine, choice and excellent, a Bourbon Perpetual.—W. F. RANGLYFFE."

PRUNING BUDDING ROSES (Ballinastor, T. W. W.).—"Cut the Manetti close to the started Roses at once, but not the dormant. As soon as a disposition to start appears in them, cut them down. You may simply bark the 4 inches of Manetti, and then it will die back. After the Roses have started well, and summer sets in, draw the earth over the point of union at least 2 inches. If Manetti stocks are budded early, say in June or July, it is best to cut them down as soon as they have well taken. I bought, August 6th, some dormant plants and cut them down at once. I have just moved them. The plants are Marie Cirodte, a fine grower and with fine foliage. I have also moved five plants of Reine de Mal, similarly treated. They were budded six weeks before I bought them. Do not prune the nice bushy plants of Manetti started Roses at present, if they are forward in leaf and bud, but thin them out, and cut back all the damaged parts after danger of frost is over, leaving the

undamaged. Road scrapings and decayed stable manure mixed are good food for Roses.—W. F. RADCLIFFE.

ROSE LEAVES BLACKENED (T. C. O.).—The black substance on the leaves sent is a fungus, the result of honeydew or the secretion caused by some insect. We are unable to say what insect it is caused by, but we think it is green aphid. You will see from the advertisements in the Journal who are the manufacturers of materials for fumigating purposes. The pastils we do not consider good or effective. Prepared tobacco paper is best.

GLOIRE DE DIJON AS A ROSE STOCK—TONGUEING ROSES ON MANETTI STOCKS (J. J. M.).—Gloire de Dijon is stated by Mr. Rivers to be a good stock to bud *Maréchal Niel* on. Doubtless it would be good stock for any free-growing Rose. It is, however, too good a Rose to sacrifice for such a purpose, unless it be for *Maréchal Niel* and other choice Roses. With regard to tongueing Roses on the Manetti stock, in order to make them root, I have never found any necessity to do so. If Roses be buried 2 inches over the point of union, and protected from scorching summer heats and severe winter frosts, they will almost always root freely. Mr. Curtis, as I understood him, cuts the bark here and there at the point of union, about an inch, to form tongues. The tongue thereby, he says, is induced to form roots. Here (Oxford, Fitzpaine), on the sandy loam, Roses on the Manetti stock emit freely their own roots.—W. F. RADCLIFFE.

PLANT FOR EAST WALL (Amateur).—The *Aristolochia siphis* is a climber that would succeed on an east wall, and *Crataegus pyracantha* would also suit you, as it produces fine clusters of red berries in autumn.

CHOROZEMA IN GREENHOUSE (Idem).—It should have the lightest and most airy of situations; shade to it is injurious.

GRAFTING CAMELLIA (A. B. A.).—Camellia stocks are grafted. Now is a good time to graft; the stock should be placed in a bathed, and the scions must be inactive when they are placed on the stocks. Trenching may be performed at the end of March or beginning of April. It is not necessary to give them heat.

CYCLAMENS LEAFLESS (Idem).—Your plants may be leafless in consequence of the loss of the growing part, or owing to the plants or corns having been but recently repotted after their importation. The soil should be kept moist, but neither very wet nor dry. In potting, the corns should be entirely covered with soil. A compost of two-thirds fibrous loam and one-third leaf mould, with a free admixture of silver sand, will grow them well.

PRUNING ROSES (Idem).—It is now time to prune Roses, and pruning ought not to be delayed. By pruning a part or all at a time you will have flowers succeeding each other, but to have a good bloom pruning should all be done at once. Standards with long shoots may be left rather long, and trained umbrella-fashion, but they look best when left to assume their natural habit, regulating the head by pruning, &c. The dwarfs on the Manetti stock with shoots 3 feet long, we would shorten to 18 inches, and cut the side shoots in to two or three eyes or buds each; but if you wish for a dwarf plant you must cut the long shoots back to at least 1 foot from the ground.

DRACENA TERMINALIS FLOWERING (C. McLaren).—It is rather unusual for this to flower, but we have known similar instances. It is probably owing to the liberal treatment you have given the plants.

PITS FOR WINTERING BEDDING PLANTS (A Constant Reader).—We prefer for this purpose pits with a span-roof and about 12 feet wide, having a path along the centre, and stone shelves, though wood will do, on both sides, leaving about 2 feet 6 inches for a path. This should be so sunk that shelves could be placed over it at about 15 inches from the glass. The house, or pit, need not have any side lights, and the side walls need not be higher above ground than sufficient to allow for the spouts. Ventilation should be provided at the apex. You will only require top lights, and the end where the door is should be of glass, level at least with the point to which the roof-lights come. The shelves should be placed about 1 foot below the tops of the wall-plates. For a house of this size you will need two 4-inch pipes along both sides and one end—that is, a flow and return. An ordinary pit may be 8 feet wide, and a 4-inch hot-water pipe all round will be sufficient to keep out frost. There should be a stage about 18 inches from the glass on which to place the plants in pots, or pans. There may be a path in front in order to allow of access to plants for watering and other purposes.

TACSONIA SPLENDENS NOT FLOWERING (Tyro).—Your plant is probably not trained sufficiently near the glass, and has not sufficient heat to mature the growth on which the flowering depends. Secure a good growth, and train it near the glass—not further from it than 6 inches—and give no more water than enough to keep the foliage from flagging. In winter keep it dry, and merely thin out the shoots where too thick, shortening those that grow irregularly. Keep the plant under rather than over potted.

LAWN MOSSY (E. W.).—The moss is in consequence of a class surface and poor soil. It is a good plan to rake well and thus get rid of as much of the moss as possible, and then top-dress with very fine rotten manure or leaf mould, but manure is best. The lawn can hardly be too well raked, and it should be done at once, and the top-dressing given in March. Let it remain until the beginning of April, and then rake off the rougher portion and sow with lawn-grass seeds and a large proportion of Suckling Clover (8 lbs. to the acre). Give a light raking before sowing, and roll well after sowing.

COOL ORCHIDS (Ignorance).—Half a dozen for a greenhouse are *Epidendrum macrochilum* roseum, *Cymbidium eburneum*, *Lycaste Skinneri*, *Odontoglossum grande*, *Trichopilia tortilis*, and *Cologene cristata* major. The prices vary much according to the sizes of the plants. Consult a nurseryman.

CLEMATIS BEDDING (Idem).—The plants are planted out in the bed, and the shoots trained over the surface by means of stakes, but best to a wire trellis. The plants are not taken up but left in the ground, and have the old dead shoots cut out in spring before they begin to grow, and the bed top-dressed with loam, leaf mould, and thoroughly-decayed manure. The shoots are tied down.

PLANTING A FLOWER GARDEN (Kate).—We think the centre bed too large for the others, and it would be improved by a centre of *Iresine*, followed by belts of the Golden *Feverfew*, and edged with purple *Verbena*. Having two circles of eight beds each round the centre, and each eight beds planted alike, is a very simple way of doing it, and we have no

doubt it will look well as a change. The first eight beds, as you propose may be centred with blue *Loebelia*, and edged a foot wide with *Cerastium*. The outside eight beds will also do well centred with scarlet *Verbena* and edged with *Nierembergia*, lilac; but as the edging will be light, and not far from the *Cerastium*, we would prefer, if the heights would suit, having the *Nierembergia* in the centre and scarlet *Verbenas* outside. A centre of white-variegated *Pelargoniums*, as *Alma* or *Bijou*, without bloom, and the *Verbenas* kept below them at the outside, would also look well.

PROTECTING WALL FRUIT-TREE BLOSSOMS (C. D. D.).—In such a season as this it would be well to use protection, in order to retard the bloom. Be that as it may, we have little faith in what you have been told, that provided the most of the bloom is cut off a second bloom will open abundantly. Sometimes the best blossoms are cut off, and weak buds not expanded escape; but in general a frost that will cut off open buds will be apt to injure the weakest also, though not fully open. We have but very rarely seen unprotected trees pass through a severe ordeal as well as those protected.

BONES FOR VINE BURNERS (J. L.).—We would advise mixing the un-bolled bones towards the outside of the border, and obtaining an equal quantity of boiled bones to go nearer the place where the roots will be at once. If the bones you have saved are from six to twelve months old, the boiling is of less consequence. Fresh bones unboiled, used at once near roots, are apt to be nearly as unwholesome to the roots as putrid meat, which can only be useful when much decomposed. We would use several cartloads of old mortar with the compost if to be had.

NOTICES TO LEAVE (J. H. S., a Young Gardener).—As you are paid weekly, legally you can leave by giving a week's notice, and the head gardener can part with you by giving you a similar notice. These things are, however, seldom done in such a strict legal way. If your master wishes a change, and you conduct yourself properly, he would most likely give you longer notice; and if you thought of leaving you would consult your own interests by giving at least a month's notice, so as to cause the moving to be felt as little as possible, and give time for choosing a successor. Legality is all very well, but courtesy will do very far more for young gardeners than mere legal right. Of course, when a man misconducts himself, and does not attend to his duty, he has no right even to a week's notice.

METEOROLOGICAL TABLE (Idem).—The difficulty you have of understanding these weekly tables arises from your not perceiving that the barometer merely gives the weight of the atmosphere, and the thermometer makes us acquainted with the temperature. It would be out of place to enter on the consideration of the barometer; but if you choose to follow up the matter you will find the whole discussed in most of our encyclopedias. The mean weight of a column of air at the level of the sea, at a mean temperature of 59°, will be equal to a column of mercury of about 30 inches in height. The tube, therefore, for an upright barometer is generally close on 3 feet in height. The range of most barometers is given from 28 to 31 inches. In very dry weather, the air being free from vapour, is heavy, and pressing on the vessel of quicksilver causes the quicksilver to rise in the tube until it may stand at 30½ inches. When the air is charged with vapour and fogs it is lighter, and presses less on the mercury, and therefore the mercury falls in the tube. It is by noting the rising and falling of the mercurial column in connection with changes in the temperature, that meteorologists are able in some measure to forecast the weather. As a simple proof that a column of air is heavy in proportion to its height, the atmosphere is much more rarified and light on the top of a hill than down in the valley, and thus the barometer has been used for ascertaining the height of accessible mountains, as the mercury will fall about one-tenth of an inch for every 108 feet you rise. We presume we need not explain the action of the thermometer in showing the degree of temperature, as the mercury is expanded by heat or contracted by cold. The scale in the best thermometers is regulated so many degrees below the freezing point of water up to the boiling point. No young man will do much in gardening unless he note the changes in the thermometer, and regulate his daily and nightly work accordingly. After some experience it would seem that a great many young men will not give themselves the trouble of noticing the out-door thermometer, and that in the plant or the forcing house. In all such cases, putting on fires is nothing better than rule of thumb. The words maximum and minimum, when applied to the barometer, signify the greatest and the least weight of air during the day; and the same words applied to the thermometer just point out the greatest and the least heat, or, in other words, the highest and the lowest temperature in a day of twenty-four hours. The other columns, showing the temperature of the earth at different depths, &c., are equally important.

HOT-WATER PIPES PAINTED WITH GAS TAR (Amateur).—If, as you say, it has thoroughly sunk into the iron, we can offer you no remedy, except taking away the pipes and replacing them. If the tar is firm, and yet merely encrusts the metal, then the best course we can suggest is to take every plant out of the house, paint the pipes over with a mixture of melted grease and soft soap, apply a gentle heat, say water in the pipes at 180°, and then in about six hours with a curved knife try and scrape every vestige of the grease and tar off. Every particle of the tar left will be injurious to plants, and that in proportion to the heat applied. We have tried the above on a small scale with success.

APHIDES ON PEACH TREES IN BLOSSOM (W. H. H.).—You cannot syringe whilst the trees are in bloom, but you may smoke them several times with tobacco; or you may have a small brush and wash where you see the insects with quassia water, made by boiling a pound of chips in a gallon of water; you may easily touch the insects without hurting the blossom. Smoking would be best, but not too much at a time, or you may cause the blossoms to drop.

VINES PLANTED OUTSIDE (A Jersey Subscriber).—The great objection to the Vines being planted on the north side of the house is that the ground will receive little or no sun. In the exceptional cases referred to, we would allow these Vines to remain and occupy the back part of the house, and as layered Vines are little to be depended on, we would plant fresh Vines in the front outside border, defending the stems before entering the house. As the border outside is flat, and the wall 6 feet high, we would raise the border next the house 3 feet before planting, so as to give it a good slope to the south.

ANGLE OF GREENHOUSE ROOF (Amateur, Sheffield).—For a 15-foot rafters a good house would be formed by sides of 6 feet, and a ridge 14 feet

from the floor; but we knew nothing of the position or intention. In your case we would concrete the bottoms of the borders, have them mostly above the outside level, and plant inside the house. Place drains or open rubble above the concrete. In such stiff soil draining is particularly necessary.

PLANTING A LARGE GARDEN VASE (A. B.).—As trailers for such a vase, nothing is more effectual in summer for keeping over the sides than *Lophospermum*, *Mandragora*, and a few *Tropaeolums* of the elegant breed. Ivies, especially the green kinds, would be a fine permanent drooping edging; but then, as that must be planted inside, it is apt to rob the central plants in summer, and of course you would require to calkin the roots every year. We can have no objection to your centering the vase with *Humea elegans*, and rings of *Pelargonium*, *Lobelia*, or Variegated Grass; but a *Humea* is rather out of place when planted in a vase out of doors 7 feet high. Often a simple planting looks best. An edging of green Ivy, and nearly three-fourths of a ball of scarlet, would look imposing; so would a centre of scarlet, and rings of white or yellow variegated *Pelargoniums*, with the green edging.

MAIDEN PEACH TREES FOR ORCHARD HOUSE (Ignoramus).—Your maiden Peach trees, if they show bloom buds, should not fruit much this season. You may leave a few fruit, but as you intend the trees for pyramids in an orchard house, better cut back these side shoots with a few joints of the stem. The Nectarines, being young trees, with some side shoots near the top and two or three near the bottom, need give you no trouble, as the stem between is bristling with wood buds. These buds on the stem coming strongly will yield as good, most likely better, shoots than the side ones now made, and therefore, according to strength, we would cut back these side shoots, leaving them from 3 to 6 inches in length. This will encourage the shoots from the stem.

SEEDS (G. S. Jones).—We did not try to obtain the first seed you mention. That of *Solanum capsicastrum* ought to be supplied to you by any London seedsman.

PEACH-TREE PRUNING AND STOPPING (G. D. B.).—The trees ought to have had the shoots shortened, as this is their first season. You will find particulars as to training and pruning the Peach, by referring to Vol. XV., New Series, pages 181, 201, 226, 302, 404, and 442, also in the present volume, pages 95 and 121, the whole subject being fully treated of and illustrated. The laterals should be stopped when they have made three leaves, and the shoots intended for next year's bearing when they have grown 12 or 15 inches.

WEeping WILLOWS (C. A.).—*Salix* lybiologica does not succeed, as your experience verifies, in exposed situations. It is the finest of all the Weeping Willows in places not exposed to cutting winds, or where sheltered by other trees. The Kilmarnock, American, and Huntingdon varieties are hardier, and would, no doubt, serve your purpose. They are weeping, and suitable for the position you name; for planting on islands, and on the margin of lakes and streams, they are very desirable. The Silver and New Weeping Birch are also good.

EAST LOTHIAN STOCKS (Alpha).—These are splendid, no doubt the finest of the intermediate Stocks. They attain a height of 1½ foot or more, under good cultivation, and should be planted 1 foot apart in good, light, rich soil. With regard to the lawn, see answer to "E. W." this day.

PLANTING-OUT STEPHANOTIS AND ALLAMANDA (J. K.).—We should at once plant the above out in the border where they are to remain, and as to allow of their becoming established in their new positions with the present year's growth. If the plants are small they may be grown in pots till strong and of a good size for planting out, otherwise plant out at once.

CLIPPING BOX (Idem).—If you intend to cut the Box hard-in, which may be necessary, and will for a time at least render the Box unsightly, we should advise you to do so by the middle of April, and the Box will be assuming a good appearance by bedding-out time. If it only requires trimming and cutting into form, as the reduction in height and width will not diminish its greenness, the cutting had best be done at the end of June in moist weather.

MARANTA ZEBRINA CULTURE (Oronian).—It requires a house with a temperature of from 65° to 65° at night, and from 70° to 75° by day, with a rise from sun heat and air to 80° or 90° in summer, and in winter to between 55° and 60° at night, and 65° and 70° by day. A position near the glass should be given, but not nearer than 1 foot, and plenty of room must be afforded sideways. No shade need be given, except from very bright sun, and when the leaves are wet, as the sun falling powerfully on the leaves whilst wet causes them to blister, curl, and become spotted and brown, in which state they should not be; a moist atmosphere, though essential, should not be sought by deluging the plants with water overhead, but by sprinkling two or three times a day the floors, walks, and other surfaces with water, giving a slight sprinkling overhead in the afternoon, and that only when the plant is growing. A compost of two parts loam from rotted turves, one part fibrous peat, and one part leaf mould will grow it well, the loam and peat being torn in pieces with the hand, and not made very fine, adding one-sixth of silver sand. Good drainage must be given. The plant is an evergreen, but the old leaves perish on the appearance of the new. The top of leaf is from some Aloe, but we cannot say which without a full-sized leaf and flowers, which are necessary for identification.

GRAFTING SEEDLING LEMON (Idem).—Your seedling ungrafted will be a very long time before it flowers and fruit in its present state. It should be grafted, and now is a good time. Place the stock in a hotbed, and keep it close until the graft has taken.

PROTECTING PYRAMIDAL PEAR TREES (A Beginner).—The best material is tiffany. No plan answers better than putting in round the trees alarths 1½ inch by half an inch thrusting them into the ground all round, at from 1 foot to 1 foot 6 inches apart, and so that their tops will reach above the trees. Draw them together at top, and secure them with string. The tiffany should be put in so that they do not touch the Pear shoots and blossom. Over this framework the tiffany should be placed, made to fit exactly, and then sewed together. It will only need to be slipped over the framework, and the trees will be secure in their conical nightcaps, for such these are; they must not be employed by day except when the weather is frosty. They need not reach the ground by 1 foot, unless the branches are lower, and to keep the tiffany on the trees on windy nights, put a few nails in the laths just below the place to which the tiffany reaches down, and with strings in the tiffany opposite the nails you may make all secure against wind.

PROPAGATING GOLDEN FEATHER PYRETHRUM (F. J.).—The side shoots may be slipped off now, and they strike freely in sandy soil if placed in a mild hotbed of about 70°, and a top heat of from 55° to 60° at night. It is also increased by seed, but the best coloured and dwarfest plants are from cuttings. See also an answer to another correspondent this day.

AGERATUM FOR BEDDING (Idem).—The best dwarf *Ageratum* is that called Prince Alfred, a variety of *A. coelestinum nanum*, the latter being also dwarf and good.

TRAINING IVY-LEAVED PELARGONIUMS (Idem).—The varieties you name are good for bedding, as well as for baskets and pot culture. All the training they require is to peg the shoots so as to cover the surface of the beds.

SELECT GREENHOUSE PLANTS (Idem).—*Casimelia flimbriata*, *Valtaredo*, and *William Downing*; *Azalea Flag of Truce*, *Etoile de Gand*, *Clapham Beauty*, *Acacia longifolia magnifica*, *Chorozema cordatum splendens*, *Correa Brilliant*, *Cytisus racemosa elegans*, *Polygala Dalmaniana*, and *Monochirtum sericeum multiflorum*.

ORANGE CULTURE (A. A. B.).—The seeds or plums germinate the first year, but we do not know exactly how long they are in doing so. In a brisk heat they take about three weeks. Plants may be propagated from cuttings, heat being necessary; they must be kept close, covering with a bell-glass and giving bottom heat. The seedlings may be grafted when of the size of the scions, but best when a little thicker. They are large enough to be grafted in the second or third year. They should be grafted in March or early in April, before the scions begin to grow. The training is confined to stopping the long shoots, and pruning so as to form a compact head, dwarfness being secured by growing the plants in small pots. The fruit is produced from the wood of last and previous years. The Lemon will succeed on the Orange, and vice versa.

DRYING FERNS (Fido).—The best way to dry Ferns is between sheets of thick blotting paper, changing them frequently, and finally placing them in fresh sheets.

FERN SPORES SOWING (Idem).—Three-parts fill a pot or pan with pieces of pots or crocks, then to within half an inch of the rim with sandy fibrous peat two-thirds, and one-third fibrous yellow loam; and make level with the rim, and slightly raise in the centre, with some of the compost finely broken and sifted. Make smooth, and give a good watering, brushing the spores from the fronds over the surface whilst the soil is wet, and cover with a bell-glass, setting it on the soil within the rim of the pot. Place the pot in a saucer of water, which should always be kept full, and put it in a house where there is a heat of from 60° to 70°. Keep the soil moist, but as long as the surface remains moist do not water. Sprinkle the water lightly from a fine-nozzled watering pot or syringe, and so as not to dislodge the spores.

BEST FOR EDGING (Flora).—The seed should be sown precisely in the same manner as it is in the kitchen garden—that is, in a drill about 6 inches from the grass, Box, or other edging, and about an inch deep, placing the seeds rather thinly in the drills, and cover with fine soil. The seedlings should be thinned out to a distance of 6 inches from plant to plant, and those pulled may be planted where required, and they will be equally good for decorative purposes with those not transplanted.

GOLDEN FEATHER PYRETHRUM PROPAGATION (Idem).—You may increase your stock by taking off the side shoots, paring the ends smooth, and removing the leaves halfway up the cutting, inserting that portion in the soil, which may be sandy loam two-thirds, and one-third leaf mould, with a free admixture of silver sand. The cuttings should be placed in a hotbed, kept close, moist, and shaded until they have rooted, when they should be gradually hardened-off, and may be planted out in May.

POTTING PELARGONIUM AND CALCOLARIA CUTTINGS (Idem).—The cuttings of *Pelargoniums* should be potted singly in 3-inch small pots before being placed in the hotbed, and the *Calcarias* also; but there is no need to place either of them in pots in a hotbed, as they succeed equally well if kept in a house or frame from which frost is excluded; and the *Calcarias* do better when not potted, but planted out in good rich soil in a cold frame, and protected from frost by a covering of mats.

ROSE NOT FLOWERING (F. L. T.).—The Rose you name is very free-flowering. We would not prune it beyond removing any straggling shoots, and shortening those that are very long. If it does not flower, lift in November and replant.

COMPOST FOR DAPHNE AND POLYGALA (Idem).—We presume they are greenhouse varieties, but you do not say. For the *Daphne* the soil should consist of two-thirds fibrous peat and one-third loam from rotted turves, with a free admixture of sharp sand; give good drainage, and do not overpot. For *Polygala* use three parts sandy fibrous peat and one part turfy loam, with a free admixture of sharp sand. The last is propagated from cuttings of the half-ripened shoots of the current year, putting them in sandy soil, placing in a hotbed, and covering with a bell-glass.

PROTECTING WALL TREE BLOSSOMS (H. W. R.).—The material should be close, so as to exclude frost, for if it admit bees it will not exclude frost. The trees, therefore, should be closely covered up at night, and the covering removed every fine day when there is no frost. Use it at no other time, for the trees must have light and air.

PELAGONIUM FLOWERS (Monocroft).—The flowers are hermaphrodite—that is, male and female are present in one. The pistils or female parts rise from the centre of the flowers, and have horn-like divisions, and around them are the anthers carrying the pollen or dust, which it is necessary to place with a camel-hair pencil on the points of the horns of the pistil.

CAMELLIA AND AZALEA CUTTINGS (Idem).—The proper time to take cuttings is at the end of July or beginning of August, or when the shoots are ripe at their bases. The cuttings may be from 4 to 6 inches long. Cut below a joint, removing the lower leaves but preserving the two upper leaves. The cuttings should be inserted in small pots filled with a mixture of peat, loam, and sand, with half an inch of silver sand on the top. Plunge in a gentle bottom heat of from 70° to 75°, keep close, shaded, and moist, and in about six weeks they will be well rooted. *Azaleas* are propagated in the same way, but the cuttings are taken off earlier, or when the bases of the shoots become firm.

PEACH TREE BUDS FALLING (Lizzie Ross).—It results from the buds being imperfect, which may be occasioned by a deficiency of light, the trees being under the shade of Vines or other plants, allowing the shoots to grow too closely and overshadow each other, a deficiency of water,

during growth, or the attacks of red spider or other insects; all of which hinder the ripening of the growth and the preparation for next season's growth and fruit.

SHRUB FOR HEDGE IN TOWN GARDEN (C. E.).—The tree box does best in confined London spaces, and that we recommend. All the Ferns you name will do well in the open ground if protected, or in a position sheltered from drying cutting winds and from the sun's rays. Sprinkle them overhead every evening during hot weather. *Stenactis* succeed admirably, and they may be planted now, or in two or three weeks' time.

BROAD BEANS, &c., FOR WORKING MAN'S GARDEN (A Working Man).—Two sorts to sow at one time and succeed each other are Early Longpod and Monarch Longpod (Mackie's); but we recommend the former only for its earliness, and would sow at twice, allowing a fortnight between the periods, and substitute Johnson's Wonderful for the Early Longpod. Two good *Peas* for succession are—quantity preferred to quality—Blue Frusion, 3 feet, or, if an earlier be wanted, Essex Rival, 3 to 4 feet, which sow early in March; and Scimitar (blue), 3 to 3½ feet, March to June is its time of sowing. The *Kidney Bean* most productive and in greatest repute with the market gardeners is the Dark Dan or Liver-coloured. For *Shallots* you can hardly dig in too much well-rotted manure, mixing it well with the soil. It must be old and rotten. The sooner the *Shallots* are planted the better.

MAGGOTS IN THE SOIL OF POTS (H. N. A.).—The small maggots are no injury to the plants; they feed on decaying vegetable matter. We know of no mode of freeing the pots of them except sprinkling with fresh lime, and that would kill all it touches. Perhaps watering with soot water might be of service, putting one peck of soot in thirty gallons of water, stirring well, allowing the liquid to stand two or three days, then stirring it up and applying it to the plants. It is one of the best liquid manures known.

RAISING TACSONIA VAN VOLKEMII FROM SEED (Idem).—The seed should be sown in a pan or pot, and placed in a hotbed where there is a brisk heat of 75°, keeping moist and near the glass. Use a compost of two-thirds fibrous loam, sandy rather than heavy, and from turf torn in pieces and used rather rough, and one-third fibrous peat, with a free admixture of silver sand. For sowing the seed the soil must be fine. When the seedlings are large enough to handle pot them off singly in small pots, and return them to the hotbed, keeping them there until they have recovered from the potting, then well harden them off and remove them to a part of the greenhouse where they can have plenty of light, and a moderate supply of air. The seedlings will not flower until the third year, and perhaps not then.

SALE OF FLOWERS (Glass House).—When in London inquire of the longest-makers in Covent Garden. They are large consumers.

VERBENA (Ignorant).—We cannot teach botany. Botanists, if they adopt the natural system of arranging plants, put the *Verbena* in the Natural Order Verbenaceae; if they adopt the Linnaean system, they put the *Verbena* in the fourteenth class, Didymis, and second order, Angiospermia.

TRAINING ROSES AS INVERTED CONES (Idem).—The only way that we know of training them as inverted cones is to have wirework of that form and train the shoots to it. You may, however, tie down the shoots, which would tend to check the vigour of the plants, pruning being confined to shortening the shoots, merely removing their points.

PASSIFLORA RACEMOSA NOT FLOWERING (A Constant Reader).—The flowers fall from the plants owing to not having sufficient support. It may be want of water, air, or light, or an insufficient amount of heat, but we think this can hardly be the case, as the plant is a companion of *Allamanda Schottii*. The best position would be near the glass, training its shoots not more than a foot from it, and placing in the corner of the bed as you propose. Its proper position is on the roof. The *Allamanda* will do quite well on the globe.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 23rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.	Earth.	1 ft. dp.	2 ft. dp.			
Wed., 17	29.709	29.368	54	40	40	46	S.W.	.20	Densely overcast; overcast, brisk wind; heavy rain.
Thurs., 18	29.712	29.507	52	35	42	47	S.W.	.00	Rain; showery; clear and fine at night; frost.
Fri., 19	29.927	29.877	54	38	45	46	S.W.	.00	Dense fog, frosty; very fine; cloudy but fine.
Sat., 20	29.877	29.815	52	36	45	46	S.W.	.00	Cloudy; fine, heavy clouds; clear and fine.
Sun., 21	29.942	29.939	48	35	45	45	E.	.14	Dense fog; fine, rather foggy; heavy rain.
Mon., 22	29.937	29.883	46	32	44	44	N.E.	.18	Overcast, fine; cold wind, snow; rain, densely overcast.
Tues., 23	29.55	29.68	43	24	43	44	N.	.00	Overcast; cloudy, fine; clear and fine, frosty.
Mean	29.938	29.824	49.86	30.71	45.85	45.43		0.50	

POULTRY, BEE, AND PIGEON CHRONICLE.

THE LAST CANARY SHOW OF THE SEASON.

"INSANITY" assumes various forms, sometimes being constant and sometimes intermittent. Under the latter type may be placed *Canariensism*, which is very prevalent from October to February. The symptoms are pretty much the same in all cases, and manifest themselves in a desire to hold an exhibition of birds and to go to other exhibitions. One effect of the mania is to reduce all difficulties in the way of holding a show to an insulated negative quantity—something less than nothing, and to annihilate distance altogether, as a thing which has no right to come between the unfortunate subject of the mania and his insane longings. A friend to whom I have read this intro-

GENERA ZEBRINA NOT FLOWERING (Idem).—Your plants have not flowered because they were not sufficiently forward before winter, and unless they are started in good time, are of a good size, and advanced for flowering before dull weather begins, they do not upon their flowers well, and then they must have sufficient heat and a light airy situation.

RUDEAN FORCING (Idem).—Your plants have been too hard forced, and they are weak in consequence. It is not advisable to force the plants oftener than every alternate year, though when not forced early, they may be forced in consecutive years, if not hard forced or very long gathered from, their produce in the succeeding year being dependant on their stored-up vigour.

PLANTS FOR A GREENHOUSE (Subscriber).—To answer your questions fully would occupy several journals for weeks. Your greenhouse is what we should recognise as a stove, from the temperature, and that is very much too high for the plants you name. In winter the temperature of a greenhouse ought not to exceed 50° from fire heat, better 45°, and should not often be below 40°. The day temperature will be regulated by the weather, but the more air given the better, and the thermometer should not fall below 45°. In addition to the *Fuchsias*, *Pelargoniums* of different sections, *Liliums*, *Camellias*, *Calceolarias*, *Roses*, &c., which it seems you already possess, you may have *Azalea Flag of Truce*, *Ivy-leaf*, *Rosy Circle*, and *Clapham Beauty*; *Acacias armata*, *longiflora magnifica*, *oleifolia elegans*, *Chorozema cordatum splendens*, *Citrus japonica* (Ochotea orange), *Correae* *Brilliant* and *magnificus*, *Cycloclamus africanum*, *Atkins*, *persicum* in variety; *Coronilla glauca*, *Cytisus racemosa* *superbus*, *Rhiphyllum Rosellianum*, *Hydrangea japonica*, *Indigofera decora*, *Monarda* *enfiormis*, *Nerium splendens*, *Rhododendron jasminiflorum*, *Statis* *crassifolia*, *Wisteria corymbosa*, and *Vallota purpurea*. Of fine-foliaged plants, variegated or otherwise—*Agapanthus variegatus*, *Bambusa Fortunei* *variegata*, *Echeveria metallica*, *Dracaena australis*, *Hydrangea japonica* *variegata*, *Farfugium grande*, *Phormium tenax variegatum*, *Sedum Sieboldii* *variegatum*, *Yucca aloifolia variegata*; also *Primulas*, *Clematis*, and herbaceous *Calceolarias* from seed, and annuals such as *Balsam*, *Amaranthus bicolor*, *elegantissimus*, *melancholicus ruber*, *tricolor*, *Globe Amaranth*, *Browallia elata* and its white variety, *Celosia pyramidalis aurea* and *coccinea*, *Martynia fragrans* and *lutea*, *Rhodanthe nuda* and *atro-sanguinea*, *Thunbergia alata* and its white variety, and *Walizia corymbosa*. Cultural directions for the last will shortly be given in the Journal, and for the treatment of the plants we recommend you to purchase Keane's "In-door Gardening," which may be had free by post from our office if you enclose twenty postage stamps.

AMERICAN BLIGHT (T.).—The insects are now wintering beneath the soil about the trunks of your trees. Try whether pouring ammoniacal gas liquor frequently around the stems will prevent their coming up. If they reappear on your trees brush over them carbolic acid.

ANTS IN CONSERVATORY (Haley).—Sprinkle guano over their runs daily until they depart.

VINES BLEEDING (K. Y.).—You should have pruned your Vines in November. The mild winter had induced the sap to flow earlier than usual, so that the ends of the sap-vessels on the cut surfaces of your recently pruned Vines had not contracted sufficiently to prevent the outflow of the sap. Keep the house cool, and apply some of Thomson's astringent to the bleeding surfaces.

NAMES OF FRUITS (Frederick Bottomer).—1, Golden Pearmain; 2, Yorkshire Greening.

NAMES OF PLANTS (J. W. W.).—We cannot identify the Conifer unless you send a cone as well as a spray of the leaves. (W. T. Moore).—We cannot name plants from leaves only. No. 2 is *Elifium floridanum*, or Florida Ailseed tree. It is propagated by cuttings of the young ripened shoots in sand under a glass in summer. (W. A.).—*Eupatorium ageratifolium*, (Sophia).—*Fuchsia splendens*.

duction, says "The man understands his own complaint to a nicety," from which I infer I am touched with "Canariensism" myself. Well, I admit the fact, and when I recall to memory some of the incidents in connection with shows I have managed, and how on one occasion I was engaged from morning till morning again in unpacking and arranging birds, and then preferred to lie down on the floor in front of the fire instead of going home to bed, as any sane man would have done, turning out again before daylight on a rainy January morning to meet a late consignment of birds, I must admit such conduct has what we call here a "daft" sort of look. And when all the business of our last show was completed, and a simple arithmetical process showed the balance to be on the wrong side, a state of things which the Committee (all insane) speedily rectified by a mechanical process known as "putting the hand in the pocket," voting that holding large shows in small towns is a

delusion and a snare (a resolution indicating returning sanity)—I say that when, after all this, I found myself the next night deliberately walking to the railway station and coolly asking for a second-class return to King's Cross, well knowing I had to travel six hundred miles for no other purpose than to see the "last Canary show of the season," I said to myself, "W. A. B., you are mad!" The officials, however, not suspecting my infirmity, handed me my ticket, and on entering a carriage, to my great delight I found a brother lunatic, one of the very men who had expressed such sound prudential maxims the night before, snugly ensconced in a corner, back to the horses, bent on the same errand, and in a few minutes we were whirling along at express speed towards our destination, the Crystal Palace.

There were upwards of 1000 entries, nearly 700 of which consisted of Canaries and Goldfinch Mules, sufficiently attesting the increasing interest which attaches to the breeding and exhibition of these beautiful specimens of the feathered tribe. As a whole, the Show was a success, but I am sure I have seen some classes better represented in previous years. I noticed that some exhibitors were *conspicuous by their absence*; but a glance at the catalogue showed the names of Walter, Mackley, Hawkins, and Judd, whom, without making invidious selections, I know to be good men and true men, whose names are a guarantee for the honesty of the specimens they show; while among amateurs, Messrs. Bemrose and Bexson representing the Derby School, and the firm of Moore & Wynn with thirty-nine entries doing valiant battle for Northampton, Vine from the Isle of Wight, with Ashton, Doel, and Young—leviathans among Mules—were in themselves a tower of strength. All the above exhibited fine studs; but I have seen Walter in better form. He has not been fairly "in the hunt" this season.

Time was when this last Canary Show of the season was without a rival, and exhibitors kept their best specimens for it; but other really first-class shows with liberal prize lists coming on before it, breeders are induced to exhibit elsewhere, and one by one their best specimens are claimed, till, by the middle of February, their studs become so diminished that they are obliged to fill up their entries with birds much inferior to many they have lost by sale at bygone shows. Hence this great winding-up show of the season assumes more the character of a great market for stock than a gathering of the choicest specimens.

In *Norwich* birds, Clear Yellow and Clear Buff were numerously represented. The 1st prize birds in each class shown by Mr. Havers, of Norwich were good specimens. The evenly-marked 1st and 2nd prize birds, and 1st and 3rd in Classes 3 and 4 respectively, exhibited by Messrs. Moore & Wynn, of Northampton, deserved their position; and 172, 2nd prize, Class 4 (Mr. Bemrose, Derby), was a grand bird, though lame. The ticked and unevenly marked birds were not a remarkably striking class. Two prizes only were awarded to the Yellows, while a splendid specimen of the very bird the class is intended for—i.e., birds not absolutely clear, was unnoticed. I refer to No. 210 (Mr. Havers), an exceptionally fine specimen. An equally strange oversight occurred in Class 4, where No. 177 (W. Walter, Winchester), was very highly commended as an even-marked bird, though blotched on one side of the neck, and should not have been in the class at all. The Crested Norwich were in many instances not up to the mark, the classification being very open, including every description of Crested Norwich bird grouped under two heads only. I think that the power to award extra prizes should surely have been exercised here to its fullest extent. Among the Buffs were two of the finest crested birds in England; 276, clear body with dark green crest (J. Young, Monkwearmouth), and 277 (W. Walter). The former in particular has a marvellous crest.

The *Belgians* do not seem to be quite so fashionable as formerly, but some fair birds were shown. The Crested Belgian class is, I think, a mistake; there are few, if any birds of this description, as there are only very few breeders who have made it their study to import the crest into this variety. The bulk of the specimens shown as such are for the most part Manchester and Yorkshire Crested, and I think that in adjudicating a class avowedly for Crested Belgians, the properties of the Belgian variety (*position* birds) should materially influence the award. A class for "Any variety of Crested Canary not being Norwich," would admit all descriptions of crests.

Among the *London Fancies*, No. 369 (W. Broderick), was a glorious bird.

The *Lizards* were a wretched lot, though individual specimens were good; 390 (G. Tuckwood), 1st prize Golden-spangled was a gem, and "found" at his selling price; and 397 (Howarth Ashton), 2nd prize, was a beauty also. The same names stood in the same relative positions with equally good birds in the Silver-spangled class.

The *Gimmoms* were excellent, the chief honours falling to Messrs. Moore & Wynn, and to Mr. H. Vine, Isle of Wight, whose 1st prize Buff, No. 412, was very high in colour and quality.

In the "Any other Variety" class the Judges paid a graceful compliment to our friends across the border by giving 1st and 2nd prizes to two remarkably fine specimens of the Glasgow Don or Scotch Fancy—the first, I think, ever sent so far south. These two birds have gained highest honours elsewhere, and may be considered as types of their class, which are mongrels. One glance at their contour will show that, and Belgian is stamped in their every motion. 488, S. Hinds, wrongly entered, would in its proper place, Class 7, have taken a high position.

What shall be said about the *Mules*? They were simply superb; but I was grieved to see one or two birds of known merit standing low on the list purely from want of condition. The Dark Mules were a good class; 587 (J. Young) was wrongly placed among the Jonques, or must have stood 2nd, if not 1st. Among the Linnet Mules, 608 (J. Baxter), only wanted soap and water to have placed it first; and 616, Greenfinch and Goldfinch (Ashton) in the "Any other Variety" class fairly earned its 1st prize; not so No. 619 the very highly commended attached to it. It is a Goldfinch and Canary Mule, and should be in Class 25.

The British and Foreign Birds were numerous and interesting, but I leave them in other hands. The Canaries and Mules are my "fancy." I travelled some hundreds of miles to see them, and though, when I found myself being carried homewards by mail express, I began to wonder what had sent me on such an errand, I believe that next year I shall do the same. I spent two nights stretched on the seat of a second-class carriage, with a pair of boots placed crossways for a pillow, and a rug for counterpane—not the most comfortable arrangement in the world; but we in the far north do not see the Crystal Palace every day, and it is worth all the trouble and inconvenience if it be only to meet old familiar faces, and shake hands once a-year. I received much attention from Mr. Wilkinson, the Superintendent, and when by an "open Sesame" kind of process he passed me through a private door without the precincts of the building to smoke a cigar on the sunny side with Major Ashton and one or two friends, I wrote him down in the tablets of my memory as a model manager. *Vivant* Crystal Palace, its Bird Show, and its Superintendent.—W. A. B.

The Judges were Mr. G. J. Barnesby, Derby; Mr. A. Willmore, London; Mr. T. Moore, Fareham; and Mr. W. Goodwin, London, for British and Foreign Birds.

PROFIT OF POULTRY-KEEPING.

I KEEP poultry not for the sake of profit but for the pleasure of seeing the fowls run about. The account below shows the result of last year's experience. I had thirty-nine birds at the beginning of the year, and forty-eight at its end. The value of the eggs is taken from the weekly selling prices in the adjacent town, a seaport in the county of Durham. I sold numbers at these prices, the lowest being fifteen for 1s., and the highest 2d. a-piece. I have taken nothing into account for the manure or for the feathers of the birds used for the table on the one side, or for scraps from the house, rent of poultry houses (these being part of my occupancy), or attendance (the latter is by one in my establishment, and is a labour of love) on the other. I had to buy every ounce of food, and have kept a strict account of the outlay, but the birds have an unlimited grass run. I sold a few birds for the spit, and obtained 2s. 6d. each for them. I kept two pairs of Guinea fowls during the year, and do not think I had forty eggs from them; the hens seemed to be constantly laying, but they laid away in the fields and the eggs were stolen. I ought to have had nearly three hundred, which would have materially increased my profit. The food was varied just as I could buy it cheapest, and consisted of barley, oats, wheat, Indian corn, buckwheat, boxings, &c. By-the-by, I saw several paragraphs in your Journal for and against buckwheat, my experience is decidedly in favour of it. I was unfortunate at the beginning of the year and had not a score of eggs before February, but I was fortunate towards the end, as I had 417 eggs in November and December, and sold most of them at 2d. each, and glad the people were to buy them. Since this year came in I have had on an average seventy-five eggs a-week.

Now it appears to me that the pleasure of poultry-keeping can be enhanced by making a profit without having fancy birds to be sold at fancy prices; and if more attention were paid by the humbler classes to the pursuit, it would be an advantage to them, and tend not only to their pleasure but their profit. The sum of £6, which I gained in the year, would be a great assistance in a poor man's household.—A SUBSCRIBER FOR SIXTEEN YEARS.

	£	s.	d.		£	s.
Thirty-nine birds on 1st				Value of eggs (2208) during		
Jan., 1868, at 2s. 6d. each	4	17	6	the year.....	11	6
Paid for food during the				Value of birds for table		
year.....	10	1	8	during the year, thirty-		
Value of eggs set.....	0	10	1	five at 2s. 6d. each.....	4	7
Profit during the year....	6	4	9	Forty-eight birds on 31st		
				Dec., 1868, at 2s. 6d. each	6	0
	£21	14	0		£21	14

TESTIMONIAL TO MR. DEAN WOLSTENHOLME.—On Tuesday evening, the 23rd inst., in the Freemasons' Tavern, Great Queen Street, London, Mr. Wolstenholme was presented with a purse containing £50, subscribed by the leading Pigeon

fanciers of England, Scotland, and Ireland. F. Esquilant, Esq., presided on the occasion. We hope to give a detailed report next week.

POULTRY CATARRH.

OWING to the long continuance of damp unseasonable weather, some of my Houdans became affected with a species of bronchitis, which I believe is peculiar to French fowls. The symptoms are a gurgling noise in the throat, an occasional cough, and expectoration. After trying various remedies without any very beneficial result, I eventually made the following experiment: Having poured half a dozen drops of Powell's balsam of aniseed into a teaspoonful of port wine, I administered the dose at night to one of my invalids. The next night but one I repeated the dose, and on the following morning the bird was perfectly well. One of my neighbours tried the recipe with equal success.—H. S. FRASER.

MELROSE POULTRY SHOW.

THE third Exhibition of the Waverley Association took place in the Corn Exchange Hall, Melrose, on the 17th and 18th inst. Nearly 200 pens of Poultry, and upwards of 120 pens of Pigeons and Cage Birds were exhibited. Of *Dorkings* there was a fine show, and all the other classes were well represented by birds of excellent quality. The Pigeons were not numerous, but very good. The attendance was not so large as in former years. The following is the prize list:—

DORKINGS (Silver).—1, A. Curle, Melrose. 2, J. Paul, Glasgow. 3, D. Annan, Torr, Cnpar-Fife. *hc*, T. Raines, Stirling; G. H. Plummer, Dalkeith; G. F. Lyon, Kirkmichael. *c*, J. Shorthose, Neweastle-on-Tyne. **DORKINGS (Grey).—**1, T. Raines. 2, Miss Milne, Otterburn. 3, T. L. Jackson, Bush of Ewes. *hc*, D. Hardie, Sorbie. **SPANISH.—**1, H. Wilkinson, Earby. 2, D. Waugh, Melrose. 3, W. Inglis, jun., Selkirk. *hc*, G. Amos, Melrose. **COCHIN-CHINA.—**1, T. Fenwick. 2, W. R. Park. 3, J. Shorthose. *hc*, J. H. Dawes. *c*, Mrs. Birkett, Broomrigg, Ainstable. **BRAMA POOTRA.—**1, R. Brownlee, Kirkcaldy. 2, T. Raines. 3, J. A. Dempster.

GAME.—1, D. Hardie. 2, J. McGregor, Crieff. 3, E. Rutherford, Bedlington Station. *hc*, M. Mycroft, Bedlington; T. Brough, Carlisle. *c*, J. Muirhead, Salton.

HAMBURGERS (Golden-pencilled).—1, 3, and *hc*, W. R. Park. 2, W. Bows. **HAMBURGERS (Golden-spangled).—**1, J. T. Loversidge, Newark-on-Trent. 2, A. Heathie, Selkirk. 3, Mrs. Brown, Abercainey.

HAMBURGERS (Silver-pencilled).—1 and 2, W. R. Park. 3, J. Musgrave, Longtown.

HAMBURGERS (Silver-spangled).—1, J. Musgrave. 2, W. Bows, Carlisle. 3, G. Calthness, Carnoustie.

ANY OTHER VARIETY.—1, W. R. Park (Crève-Cœur). 2, J. Paul (Polands). 3, J. H. Dawes (Houdans). *hc*, J. H. Dawes (Houdans); J. Elgar (Cuckoo Dorking); W. R. Park (Sultans).

GAME BANTAMS.—1, J. R. Robinson. 2, W. Mabon, Jedburgh. 3, D. Brownlie. *hc*, J. Dunlop, jun., Berwick-on-Tweed; D. Hardie.

BANTAMS (Any other variety).—1, H. Yardley, Birmingham. 2, T. C. Harrison, Hull. 3, J. H. Dawes (Japanese). *hc*, W. B. Graham (Black); T. Watson, Bridge of Earn; Mrs. R. Freer, Kirkcaldy; J. Archibald (Japanese); A. Mills, Kirkcaldy (Black); S. & R. Ashton (Black). *c*, Mrs. R. Freer (Golden Sebright).

BANTAM COCK (Any variety).—1, D. Hardie. 2, J. Brown, Selkirk. 3, W. Mabon (Brown Red).

DUCKS (Aylesbury).—1 and 3, J. Scott, Newhall. 2, A. Haggart, Leslie. *hc*, J. Knox, Melrose; G. Dryden, Selkirk; W. Hood, Jedburgh. *c*, Mrs. Scott, Ancrum.

DUCKS (Rouen).—1 and 2, D. Hardie. 3, Mrs. Scott.

DUCKS (Any other variety).—1 and 2, T. C. Harrison, Hull. 3, T. Stevenson, Blackfield, Melrose (African). *hc*, A. Thomson, Mainhill, St. Boswells (Muscovy).

SELLING CLASS.—1, A. Crosbie, Abbotstown (Spanish). 2, W. Inglis, jun. (Spanish). 3, T. L. Jackson, Bush of Ewes, Langholm (Silver Dorking). *hc*, W. Paterson (Spanish); D. Cheyne (Silver-spangled). *c*, G. H. Plummer.

COTTAGEERS' CLASS.—1, Mrs. Waugh, Melrose. 2, W. Linton, Hume's Close, Selkirk. 3, J. Musgrave, Longtown. *hc*, W. Hart, Gattouside.

TURKEYS.—1, T. L. Jackson, Cambridge. 2, J. H. Dawes. 3, J. Meiklam, Gladwood. *hc*, Mrs. Scott.

GESE.—1, Mrs. Birkett (Toulouse). 2, D. Hardie (Toulouse). 3, T. L. Jackson (Emden).

PIGEONS.

FANTAILS.—1, A. Smith, Brughly Ferry. 2, H. Yardley. *hc*, J. Spence, Edinburgh. *hc*, F. Graham.

POUTERS.—1, J. Fairley, Edinburgh. 2, F. McCrae, Aberdeen. *hc*, J. Spence. *c*, H. Yardley.

NUSS.—1, W. Cheyne. 2, R. Paterson, Melrose. *hc*, J. Sibson; J. Campbell, Langholm; R. Paterson.

JACOBS.—1, J. Spence. 2, H. Yardley. *c*, J. Sibson.

TURBOTS.—1, W. R. Park. 2, F. Graham. *hc*, R. Paterson; H. Yardley; F. Graham.

OWLS (English).—1, R. Paterson. 2, J. Sibson. *hc*, J. Spence; F. Graham.

TUMBLERS.—1, F. Graham. 2, J. Pringle, Newcastle-on-Tyne. *hc*, J. Campbell; H. Yardley; F. Graham.

ANY OTHER VARIETY.—1, H. Yardley. 2, A. Crosbie. *hc*, F. McCrae (Mottled Trumpeters); F. Graham. *c*, J. Sibson (Trumpeters).

SELLING CLASS.—1 and *hc*, R. Paterson. 2, J. Campbell. *c*, A. Crosbie (Nuss).

CANARIES.

DON (Yellow).—Cock.—1, J. Cleghorn. 2, J. Seth, Melrose. *hc*, J. Hardie. *Hen.—*1, A. Armstrong. 2, T. Wilson, Hawick. *hc*, A. McLean, Melrose.

DON (Buff).—Cock.—1, T. Hawkins. 2, J. Cleghorn. *hc*, J. Hardie, Galashiels. *Hen.—*1, A. Armstrong. 2, J. Hardie. *c*, W. Boggie. **DON (Yellow Flecked).—Cock.—**1, T. Darling. 2, T. Wilson. *hc*, J. Cleghorn. *Hen.—*1, T. Darling. 2, A. Steel. *hc*, J. Cleghorn. **DON (Buff Flecked).—Cock.—**1, T. Wilson. 2, J. Cleghorn. *c*, A. McLean. *Hen.—*1, T. Darling. 2, J. Hardie. *hc*, J. Seth. **CAGE BIRDS.—**1, Miss C. Paterson, Melrose (Goldfinch). 2, T. Wilson (Buff Flecked Goldfinch Mule).

JUDGES.—Mr. R. Tebbay, Falwood; Preston; Mr. A. Ferguson, Kelso.

ANTWERP PIGEONS.

I HAVE seen occasionally a desire expressed to know what really is the conformation of head and other distinguishing properties of the true Antwerp Pigeon, and as I have generally kept this variety I venture to state what I consider constitutes a good bird of this kind.

I prefer the male birds to be large, muscular, full-cheated; long, broad, and clean in the flight feathers; not too long in the neck; with a very barrel head, and a real Bullfinch beak, similar to that which a good Barb should have, but twice the size, not simply in length but depth also, wattled above to about the same degree, but no wattle round the eye, which ought to be fiery red, and not bordering on yellow or orange near the pupil, but a good clear pearl—this I consider a great point; also the more prominent and bolting the eye the better.

Generally, the Blues are the proudest and most dashing birds, but those which look best when clean are the light-coloured ones with dark well-defined bars. I have seen some of a cream colour, frosted in the hackle, which were handsome except for exhibition.

I prefer the hens not so large, longer and finer in the beak, which is often somewhat dove-shaped, and altogether of a lighter build than the cocks.

I do not care how wild the birds are, the wilder and more untameable they are the better homing birds they make.

It is a matter of taste, but in my neighbourhood people generally match hens of a lighter shade to blue birds, silver for instance, or barred white ones, which also make them tell better when flying. To a flying fancier, of all kinds these I believe to be the most interesting, not moping up near the chimney side like many others, but continually on the move, flying about in circles and dashing off every few minutes as if they felt a pleasure in showing you what they could do; in fact they are more spirited than any other kind with which I am acquainted.

Another great advantage also is that they are so fond of home, and so cunning withal, that when once familiarised with your locality they are not easily lost; it would take something extraordinary to confuse some birds that I know, even if it were possible to do so. Many of them will go twenty or thirty miles without training. To prevent the tail feathers being broken while in training owing to the birds being sometimes carried in the pocket, it is advisable to shorten them from $\frac{3}{4}$ inch to 1 inch. It also makes the birds look more compact when on the wing.—JENKINS JAMES.

MANAGEMENT OF SUPERS.

IN answer to "A. B.," in No. 401, I have seen it stated that when the hive is full of bees, and they begin to fill the mouth of the hive at night, you may then try a super, but always commence with a small one. I have one made one-fourth the size of the Woodbury super to hold four of the wood bars which project through the back and front. Two or three of the bars are furnished with guide combs, the centre one is partially filled with honey or syrup. Then on a fine morning, about nine or ten o'clock, warm the super and place it on the hive; if at night the bees have not gone into it, shut it off for two or three days and then try it again. In this way I have never failed.

Will you inform me whether it is necessary to give the hive a puff of smoke previous to searching for the queen and other operations on the hive?—J. R.

[All depends upon the temper of the bees, it is not usually necessary to do so.]

CIVIL WAR IN A HIVE.

FOR several weeks past there has been going on most unseemly behaviour in my only little colony—for I have but one stock. It would appear as if there were two parties existing in the same hive, and the weaker becoming a great annoyance to the stronger, the latter are ejecting the former. The manner

of attack is of a hustling character—viz., by sometimes two, and sometimes three setting on one of the offenders, and these do not abandon her till she is ejected, after which she soon dies. How should I set in this case?—AN ANXIOUS ONE.

[We have little doubt that the unfortunate outcasts are those described by Huber as "black bees." These anomalous insects appear to be in the very highest degree objectionable to their worker sisters who set upon, maltreat, and eject them without mercy. They are supposed by some to be old and superannuated bees, which have become black through the usual downy pubescence having been worn and rubbed off their bodies; but this explanation scarcely appears satisfactory, since if it were correct, "black bees" would occur in every stock in nearly the same proportion, whereas the fact is that they are pretty numerous in some colonies, and are not to be perceived in others. We have, however, never known them sufficiently numerous seriously to affect the prosperity of a colony.]

BEEES IN SOUTH CHESHIRE.

"How have they gone on in other shires?" Here not so well. February 24th, 1868, was the day on which they commenced gathering pollen, and from that day they improved very fast. On April 6th I examined all stocks and found them with four combs, with brood dry and plenty of food, except a small stock, which was very weak and had scarcely any food.

The next thing noticed in the calendar is, "Started on April 24th the nucleus box, which did very well. The young queen was hatched out on the 9th or 10th of May, and on the 12th I saw her take her first flight; a successful wedding flight was made on the 14th, and she commenced laying on the 16th or 17th." The next date of any account is June 18th, a large swarm from a supered stock. The queen had filled the centre combs of the super with brood. This is the only natural swarm I have had, also one artificial and two nucleus boxes built up to stocks out of five colonies to commence the year, but I had robbed them to furnish the nucleus boxes early in the season.

The honey harvest has not been a very good one, although better than that of 1867. On referring to the calendar I find a remark on May 30th, "Very fine day; the bees carry in a large quantity of pollen, which I think is not a good sign, for they prefer honey if plentiful and only take to pollen when honey is scarce." I had one 30-lbs. glass super off a cottage hive, the hive itself a good weight; the others did not complete their supers.—J. R. F.

OUR LETTER BOX.

WHITE DORKING UNABLE TO STAND (F. W.).—The fowl is probably suffering from cramp, caused by bad or improper food, or perhaps from picking up the stuff put at the bottom of the pens, for instance, sawdust, which is often used. Visitors have much to answer for, and their mistaken kindness causes many a loss in a yard. We advise you to purge freely with castor oil, a tablespoonful to the dose, and to repeat the dose every twelve hours till the bird is relieved. If he seems to suffer from the purging you may give him bread and ale, or bread and wine. He should not be at liberty, as it is essential his legs should be dry and warm. Six claws are a great disadvantage to a Dorking. They are the result of an accident, and are not hereditary.

COCHIN-CHINA COCK WRY-TAILED (J. P.).—You must not breed from the wry-tailed cock; he will transmit his defect certainly, if not to all, to most of his chickens. We know no defects so sure of transmission as hump-back and wry-tail. The cause of the hen laying soft eggs is, no doubt, a temporary derangement of the secretions. We are not favourable to pounded oyster shells. It is better to throw down a heap of bricklayers' rubbish. Being too fat would prevent her from laying at all, or would cause great difficulty if not danger in doing so; but it would not prevent the formation of shell. The latter must, however, be provided for the hen, as unless she can find the ingredients in her haunts, her eggs will be shell-less, so far as the hard shell is concerned.

POULTRY-YARD ARRANGEMENTS (J. G.).—You have the conveniences for keeping poultry pleasantly. Do you intend the birds to run into the small plantation? You must begin by taking up all the brick flooring. It is impossible to keep birds healthy on stone, brick, or boards. We believe you are badly off for gravel. Make your flooring of hard clay or earth well rammed down, and cover with any loose earthy material. The latter is essential, because it supplies materials for scratching in, and always affords food which is unseen by and unknown to us. Fill in your scratching ground with road grit and bricklayers' rubbish; you may add gravel if you have it. The manure heap is very essential to health and well-being. In your plan, however, you show no means by which the birds can reach it from their roosting house. You have a door in the house at W, you may make one at the opposite side, allowing a current of air through the house, and in consequence you would put your perches across the end of the house E; they would then be free from draught. The sitting house might be at the end of the unsed pigsty. It requires little light, but it must have ventilation, and it must close to prevent the inmates from being trespassed upon by the other fowls. If the proposed house for fowls is like most other cow houses, it is not unventilated. Warped boards and similar contrivances allow a free passage for air; if, however, it is a townsmen's cow house, it is probably very perfect and close. In that case put in windows close to the roof. The

refuse green meat is good for them; but let that which is not eaten be taken away. The poultry yard must not become a receptacle for decayed vegetable matter. The best fowl for general purposes is the Dorking. It is a good layer and sitter, and the best table fowl in the world. The Brahma Peetra and Cochins are harder, but by no means so good for the table. You should choose from these three.

PROFIT OF POULTRY (J. P.).—According to your showing in your second communication, your poultry is not self-supporting. There are some items now not quite clear. Treats—three chickens, one-third of the whole produce of the yard, are unaccounted for, unless they are the "some that died or were killed by accident." Then, you ate luxuriously of really new-laid eggs at the price of "shop" eggs. Your great difficulty is the food, which should be reduced at least one-sixth. Your kitchen and house scraps should be turned to better account; and it should be impressed on the poultry-woman that such accessories are instead of, and not in addition to, the usual meals.

SPANISH FOWLS (F. K.).—We do not know any fowl by the name of "Italian fowl." Spanish fowls will bear any confinement, but neither they nor any other fowl will do in a paved yard. The time of year has not so much to effect, in answering your second question, as the weather at the time when they are uncovered. In a warm weather we have known them deserted for twelve hours and yet retain their vitality. In very cold weather four or five hours or less will make them hopeless. In very hard frosts the least exposure spoils.

MANDARIN DUCKS (Anas).—Mandarin Ducks are as hardy as can be. They breed freely. They are always kept pinioned so that they cannot fly. It is hard to say whether they are useful in a garden. We are sure they are harmless, but we have heard people say they did good by destroying insect life.

DEFICIENCY OF EGGS (E. C. B.).—If your hens are hens they have not been laying yet, but will soon. If you have pullets among them that were hatched last April and May they are laying now somewhere or other, although you do not see the eggs. If table poultry is your object you do well to exclude Brahmas and Cochins; but if eggs are the desideratum they would help you, especially in the winter months. Egg-producing may be calculated according to age with tolerable certainty, but more so with Brahmas and Cochins than any others.

BLACK RED BANTAMS' EGGS (Bantam).—Write to some of the prize-takers at the poultry exhibitions, and ask them if they will sell eggs, and the price.

EGG-PRODUCING FOWLS (A. C.).—You will not have the slightest difficulty in keeping fowls to do all you require of them. Cochins may be kept in by a fence 2 feet high. Brahmas, although more wandering, do not care to fly over impediments. We have found the Crève-Cœur easily confined. We do not advise Dorkings, Hamburgs, Houdans, or Spanish. They scorn all attempts at confinement. By properly arranging the ages of your fowls, you may have eggs all the year round.

PECKHAM POULTRY SHOW.—"CINCINNATASS" informs the Editors that he has been credibly informed that fowls sent to the forthcoming poultry exhibition at Peckham will not be fed on Peckham Bye.

DORKING COCK CATARRH (K. M. H.).—Try the remedy adopted by a correspondent, who states it in another column to-day.

AGE OF PIGEONS, &c. (Fido).—We do not think that the wing feathers form any sure guide as to the age of a Pigeon. All Pigeons delight in salt. We follow this plan:—We mix in a pan loam, broken mortar, and small gravel, then sprinkle with a handful or two of common salt, and damp the whole slightly. Our Pigeons are constantly picking it, and are very healthy.

BULLFINCH AND GOLDFINCH (Mrs. C.).—"Adopt similar means to those used last season with the Bullfinch hen, and in April put a two-year-old Goldfinch cock with her before supplying nest materials. Keep at the bottom of the cage plenty of moss, so that there may be less likelihood of the eggs being broken when laid. Bullfinch hens often lay their eggs on the bottom of the cage; place the eggs for sitting under a Canary hen, which you should contrive to have nesting about the same time. If the Canary hen should begin to sit a week before you require her services for the Bullfinch's eggs I should make use of her; I often, when driven by necessity, let my hens, if good sitters, go on three weeks, or a few days beyond their usual thirteen days, if by chance I have something I particularly wish to have reared. All Canary hens will not allow this liberty to be taken with them, much depends upon their nature and the temperature. Some hens will not sit a day beyond the usual period, and some even go off sitting just previous to the chipping. Do not place the Goldfinch with the Canary whilst sitting. Whilst breeding and laying supply the Bullfinch hen with pounded oyster shell, chalk, old mortar, and grit sand, in a box or tin. The hen may regain her natural colour next moult. I have known many instances of Bullfinches losing their natural varied colours through having a too-free supply of hemp seed. Hemp seed is very fattening, and is good to a certain extent in breeding time and in winter, for Casarics in particular, but I should recommend you to discontinue as much as possible the free use of it to your Bullfinch hen, and give as principal food canary seed with flax, and the milder kind of rape (often termed summer rape seed), with a few groats. A respectable bird-dealer would be the best to apply to for a Goldfinch—for instance, Mr. P. Jackson, Crystal Palace; Mr. J. Judd, Newton Causeway; Mr. Hawkins, Bear Street, Leicester Square; or some of the exhibitors at the late Crystal Palace Show. Inquire for a two or three-year-old Goldfinch (which age, beyond a yearling, may be told by the light legs), for with not one out of a dozen yearling Goldfinches will you be successful. Pay particular attention to my last remarks, and do not be persuaded because a bird may appear to be a nice bird.—G. J. BARNESBY, Derby."

INDIAN JUNGLE FOWL.—An Old Subscriber wishes to purchase some pure Indian Jungle fowls.

POLLEN COLLECTING (A Bucks Bee-keeper).—"February the 6th is early in some years and situations; but near Exeter the bees have carried pollen freely at intervals throughout the winter.—A DEVONSHIRE BEE-KEEPER."

LIGURIAN QUEENS (Joseph Latham).—If the queens are living, there ought by this time to be plenty of young Ligurias on the wing during the middle of every fine day.

ELMBURST.—"I have a letter bearing the above address to which I am unable to reply, not knowing the post town. Will my correspondent supply the omission?—T. W. WOODBURY, Mount Radford, Exeter."

WAXEN SHEETS (Novice).—"I am not aware that plain wax sheets are made for sale. If 'NOVICE' will turn to the Journal for September 10th, 1888, he will find full directions for making them.—ARICOLA."

WEEKLY CALENDAR.

Day of Month		Day of Week	MARCH 4—10, 1869.	Average Temperature, near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
				Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. h.	
1	TH		Meeting of Royal and Linnean Societies.	49.5	31.1	40.3	11	42 at 6	43 at 5	51 at 0	55 at 0	21	11 52	
5	F			48.7	31.5	40.1	13	41 6	41 5	55 5	58 10	22	11 38	
6	S		Royal Horticultural Society, Promenade.	48.5	32.3	40.4	18	38 6	46 5	31 2	16 11	23	11 30	
7	SUN		4 SUNDAY IN LENT. [7-30 P.M.]	49.0	32.3	40.7	17	36 6	48 5	29 3	after.	24	11 30	
8	M		Meeting of Royal Geographical Society.	49.2	31.5	40.4	18	38 6	50 5	16 4	58 0	25	10 54	67
9	TU		Meeting of Institute of Civil Engineers.	49.2	31.0	40.1	12	31 6	51 5	56 4	56 1	26	10 39	68
10	W		Meeting of Society of Art, and Royal Microscopical Society, 8 P.M.	49.6	31.7	40.6	16	28 6	53 5	29 5	57 2	27	10 24	69

From observations taken near London during the last forty-two years, the average day temperature of the week is 49.1°; and its night temperature 31.6°. The greatest heat was 70°, on the 4th, 1869; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.60 inch.

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INDIAN MAIZE AS A GARDEN ESCULENT.



MAIZE, or Indian Corn, though constituting in various forms the staple food of a large portion of the inhabitants of tropical and semi-tropical countries, as well as of their cattle, is comparatively unknown in these northern latitudes. The coarse yellow variety is that which alone appears in commerce, and then only for feeding horses and poultry; for these it is well adapted, but not better than other food as easily procur-

able. Sometimes wheaten bread is adulterated with yellow Maize, and this is the least objectionable of such practices.

Maize, however, eaten in a green state, as many other valuable and popular esculents are, is a thing almost unheard of here. This is a loss to us, for it is extremely nutritious, and profitable to grow for such a purpose; it would also supply certain links in the succession of such delicate vegetables as green Peas, Kidney Beans, &c. But in order to enjoy it in perfection it is necessary to cultivate those select varieties which in warmer countries are used for table purposes, for the common yellow is unfit for them. There are many more of these varieties than I think most readers of these pages have ever seen, including even those who reside in our colonies, and others. I am anxious, therefore, to make known the results of a very successful trial which I made of no less than twenty varieties of Indian Maize, which were kindly chosen for me by the American Commissioner at the Paris Exhibition, as I think it is certain that so complete or beautiful a collection was never before sent to Europe (such is the testimony of numbers who saw the seed), and as the growth and perfect maturity of the kinds shown quite equalled those of their original state, it would be a matter of regret if this opportunity, which is not likely again to occur, were now lost. Of course, some varieties will in time be eliminated from the collection, and others be found unsuitable for colder localities, but out of a succession of so many, a good number ought eventually to be found useful and valuable.

I had at first determined to distribute the seeds to friends, but reflecting on the doubtful results which might have arisen from such an uncertain method, I have transferred them to Messrs. Barr & Sugden, of Covent Garden, whose former experience in this very esculent rendered them the fittest to undertake the task. I trust that this summer will not pass without some practical amateurs taking up the matter, and recording their experience thereon. Many of our visitors witnessed the beautiful plants, varying from 3 to 10 feet in height, with their long leaves forming very ornamental objects, and adapted for subtropical effects. I am told that the height of 10 feet is unsurpassed in China, Japan, or Australia. This may be because the varieties generally cultivated in these countries are not so carefully selected as these, which represent a selection from the whole of the United States. A friend, resident here at present, Colonel J. Lewis Peyton, a large landed proprietor in Virginia, also declared to me

that the size of the cobs and the perfect ripeness of the seeds were remarkable.

Among the twenty distinct varieties were cobs of many colours and shades, ranging from the large pure white of Georgia, which is so prized for flavour, through shades of yellow to tawny; others were of a bright red, some of an indigo blue, and a number were of mixed colours. The sizes varied remarkably from the little pearl-like "pop corn," which is such a favourite with confectioners in America, and which only grows to the height of 3 feet, with small compact cobs, ripening early in September, to the huge red Corn having cobs weighing 15 or 16 ozs., and 18 inches long by 4 in diameter. A good idea of the value of the last may be obtained, when I state that the finest cob I could select of the best Algerian Yellow Maize grown in a garden here by a colonist well acquainted with its habits, only reached 5 ozs. Both varieties ripened within a week of each other. Other pure white Corn cobs were even longer than this red sort, and not very much inferior in weight. Some other cobs were of a dark mulberry colour, and composed of small closely-set grains, ornamental enough for conservatory purposes, especially when contrasted with cobs, some of a fine blue, and others of a pale yellow. Several sorts ripened in October, and might not succeed so well here. I was never weary of admiring the plants while in growth, and hope others may have a similar pleasure. One or two in a large orchard house would relieve the stiffness of the foliage, and thus supply seed in cold localities.

But I must not trespass on the space here, and hasten to add some remarks on culture, which is, however, very simple.

In my case, failing to obtain any precise data, I planted in rows at 30 inches interval, the seeds being only 12 inches apart. Possibly single rows at greater intervals, with vegetables growing between, would do better; or the Australian method of plants in a triangular manner (which is only needed in windy places, so as to insert a stake between each three plants), might be preferred. In such a stormy island as this stakes at each end of the row, with cords of spun yarn interlacing the plants, were used. With this protection, my beautiful plants bent their heads without the least injury before squalls of 30 lbs. pressure to the square foot. This was in August, when a heavy-laden cutter was driven ashore, and the crew owed their safety to its being daylight, and so being able to see their course.

My soil being heavy, and my not having had previous experience, it was not sufficiently enriched. I am told that where sewage was used Maize made wonderful progress at Barking Creek Farm. Nor was I able to water the plants during the dry season of last year, though from the great heat watering was desirable. The plants were twice ridged up.

The cobs should be used as a delicate table esculent when well grown. In New York they are often boiled enclosed in one thickness of the husks, the ends being tied, and are ready for use according to the age of the cob. Some salt is usually added to the water in boiling, and butter, with salt, is spread over the cob. Served in this

manner the flavour equals that of Peas, with the peculiar aroma of all corn products in addition. Those who habitually use them in this green state (so unknown here), find them missing in northern countries, and long much for them.

As a nutritive vegetable Maize has very few superiors; many of the preparations for invalids are composed of Maize. Hominy, we all know, is the staple food of the negro, and of the South American. Many of us have seen the ears of the yellow Corn drying in the sun on the cottage walls of southern Europe. The green tops are excellent food for cattle, and the uses of the dried husks manifold in tropical regions. America will always supply us with the common yellow sort for horses and poultry, but these entirely novel table varieties are for quite a different purpose. They have now been tried during one season, and found to succeed well here. The year being favourable, the seeds were sown in the open ground in April; but it would be safer to forward them in boxes under glass, and plant out in May, according to season and locality.—T. C. BRÉHART.

JOTTINGS ON THE AUCUBA.

How much pleasure is felt by everyone having a garden and delighting in its general welfare, especially if one tribe of plants engage particular attention. Such is my own case, and my favourite at present is the Aucuba. I am in some difficulty about the management of the male flowers, so I am writing to "our Journal" for instruction. Having bought some small male plants at Mr. Standish's first sale, I soon had male blossoms, for the variety *pecta* flowered the first year after planting in the open ground, but its flowers were not then used, there being no female blossoms ready for fertilisation. Two years ago, on the beautiful dwarf green female sent out by Messrs. Veitch, blossoms opened in time to be fertilised by the later blooms of the male, and on a bush of 6 inches high I had a dozen berries, which fully ripened. Next to it is a bush of *Aucuba himalaica*, upwards of 2 feet high and in full vigour, on which I have never yet had a female blossom, nor do I see much promise of any this year; indeed, this variety is of much looser growth than the Japanese, and is not so effective.

The male *pecta* when growing freely soon loses its variegation, and becomes much more beautiful, as the central white patch is rarely healthy when in the open ground. As far as I can judge the newer variety with the white margins sent out by Veitch promises to be more effective, and to retain its variegation. From my limited knowledge I think this rule of variegation will be found almost universal—that plants whose leaves are variegated at the margin retain that character, while the central blotches are speedily lost. This is well illustrated in the golden-blotched *Euonymus*; when it grows freely its colour is lost, whereas the golden-margined variety retains its variegation permanently, and will prove a truly handsome shrub.

☞ Last year, though I thought I had taken great pains to fertilise my *Aucuba viridis* *femina*, not one berry has rewarded me for my pains. I should say that my garden is seven minutes' walk from my house, and I can only steal minutes to go to my pets at mid-day when the pollen is dry. Last year the plan I adopted was to prop a cap glass on flower pots over the male plant to keep off the rain, as a flower opened to cut it off with scissors, and let it drop into a bottle; this was loosely corked, and brought home. With these precautions, with a camel-hair pencil I fertilised many female blossoms on bushes in boxes on the lead flats of my house. By this means I have a dozen berries giving colour to the sombre old variegated *Aucuba*; but I ought to have had many more had my proceedings been properly managed. When I see small bushes grown in pots with dozens of berries, I want to know the secret of success. Of course men burdened with other occupations cannot compete with those whose business it is to succeed, but I want to succeed better than I have done. Must the anthers be gathered before they have burst, or only when the pollen is about to be discharged? I generally have contrived to leave a male flower in the female, or attached to the pistil, there to distribute its pollen grains at its leisure; for the pollen grains are so fine you cannot be certain of their transfer by a dry camel-hair pencil. How long will the pollen retain its fertilising properties? The male plant is now in blossom, but there is no sign of female blossoms. Can the male blossoms now be removed with any chance of future use?

Does the fruit of the *Aucuba* require bottom heat to germinate? Two years ago Henderson sent me berries, every-

one of which came up in the propagating house of a friend, but were overlooked by the gardener during the summer, so were lost. Last May, when my own berries were fully ripe and beginning to shrivel, I put them into a pot, which was plunged in a southern border, and covered with 2 inches of cocoa-nut fibre refuse. In the autumn I moved the pot to a cold frame, but I have not seen a sign of any young plants: must they be given up as lost, or may I hope to see them spring up with the coming spring?

I do not hesitate to ask these questions, as your Journal is open to minor matters at which old and practised hands will smile. May I, therefore, ask for instruction how to use my male blossoms with the greatest prospect of success? and how to raise seedlings from the berries without the aid of glass or other artificial culture, if such is to be done.—J. S. B., Bath.

GROWING FRUIT FOR MARKET, AT LITTLE SUTTON, CHISWICK.

MR. DANCER'S.

(Continued from page 459, Vol. XV.)

A PRETTIER sight to the lover of fruits could scarcely be imagined than that presented last season by a plantation of a hundred or more young Apple trees. Planted two years ago, the trees, supplied by Messrs. Rivers, then young maiden plants worked low on the English Paradise stock, have grown well, being now from 3 to 4 feet high, slightly pyramidal in form, and nicely branched. Last season every tree bore its crop of from eighteen to twenty-four fine large fruit, and each fruit a specimen in itself. These trees were pretty when in flower, and when in fruit handsome, the clusters being so heavy that the trees were scarcely able to bear the weight. One of the varieties was *Small's Admirable*, a large, beautiful, clear-skinned, and very excellent kitchen Apple for October and November use, and a most abundant bearer, excellent for market. The other was *Cox's Orange Pippin*, well known as first-rate for the dessert, and also a good cropper, the tree forming naturally a handsome pyramid.

Another plantation, consisting chiefly of Pears on the Quince stock, grown in the same manner, and of a fine pyramidal form, was also interesting, although not bearing such a splendid crop as the Apple trees. Some, however, were well laden, and the fruit magnificent, being large and of fine quality. Amongst others were the following—*Doyenné du Comice*, large and most excellent, but only a moderate bearer; *Huyebé's Victoria*, very handsome, and some fruits very fine; *Baronne de Mello*, large and promising; *Maréchal de la Cour*, of first-rate quality, and a good bearer; *Beurré d'Amanlis*, which grows so exceedingly strong that it does not bear fruit well in a young state; and *Louise Bonne of Jersey* and *Marie Louise*, two well-known and most excellent market sorts, being great bearers, and of fine quality. Besides these there are many others on trial here. These trees are planted about 20 feet apart each way, the ground being cropped with Cabbages, Lettuces, &c., so that not a single foot is wasted. This is market gardening made at once ornamental and profitable—fruit produced in the second year after planting with trees three years from the graft, and that abundantly, the trees themselves being about the most beautiful objects in existence, bearing fruit from the very ground upwards. What an advance this is upon the old orchard practice, with the tall standards, and thin naked stems, requiring stake supports for many years! What a waste of time that was in comparison with our present mode! Time was when we planted for our children; time is, for us to plant for ourselves. In some respects we have gone a long way ahead of our forefathers; in others we may yet learn lessons from them, and that, too, in fruit culture.

As a profitable market variety there are few Pears to compete with the old *Hessle*, or *Hazel* as it is sometimes called. Mr. Dancer cultivates it extensively, sending some thousands of bushels of the fruit to market, where it is well known, and sells well, being just the size for the street vendors, who dispose of it rapidly at "three a penny," in August. It is often dry and tasteless, yet sometimes pleasant. The tree attains a large size. *Williams's Bon Chretien*, or as the market folks call it, "the Williams," is another first-rate sort much cultivated, and very profitable, always bearing enormously. This Pear is gathered very early by the market growers, and placed in large masses in the fruit room, where it soon becomes melting, and fit for use long before the possessor of a single tree

considers it half ripe. The Pears are better flavoured when gathered thus early, and their season may be prolonged for at least six weeks by gathering them in succession.

Jersey Gratioli is an excellent Pear; Mr. Dancer has thirty or forty large trees. Last season they were enormously laden, the branches bending to the very ground with their heavy load. The fruit was large, some weighing 15 ozs., of good quality, and covered with a thick grey russet all over. It is in general a good cropper, yet I never saw trees so heavily laden as these were last season, and with fruit so large and fine on old standard trees. It is excellent for market.

Of other sorts grown for market by Mr. Dancer I may mention Beurré Bose, always a sure cropper, and an excellent sort. Marie Louise is in general good, but not always, the fruit being sometimes very gritty and full of blemishes. It is of excellent quality, and when good no Pear commands more ready sale. Grown on a standard or open pyramid, the fruit is of far higher quality than that from a wall. Louise Bonne of Jersey is also a favourite market sort, and with Mr. Dancer the fruits are frequently of enormous size, and really excellent. Beurré de Capiaumont is an old and favourite sort, a profuse bearer, and profitable variety for cultivation; the trees form naturally nice pyramids, and do not attain a very large size. Beurré Diel is also a good and profitable sort, and a strong grower. Paradis d'Automne somewhat resembles Beurré Bose, but is not nearly so good. No Plus Meuris is also a capital winter sort, succeeding well as a standard, but the fruit is very ugly. Beurré d'Arenberg is Mr. Dancer's favourite amongst all the Pears, and that which he retains for his private use. It is seldom, however, to be found so rich and good as it is with Mr. Dancer. It is generally too acid, yet here I have tasted it rich and particularly pleasant, with an agreeable brisk acidity, which is its great feature. It is not a Pear much cultivated for market. Knight's Monarch and Seckle were once largely planted in Mr. Dancer's grounds, but are both quite worthless for market, all the fruit of the former falling off the trees before ripening, and that of the latter being too small.

Apples are not cultivated so largely as either Piums or Pears, yet there are some noble fruit produced from large old standard trees of such sorts as Blenheim Pippin; Northern Greening, a fine kitchen sort; Golden Noble, a truly noble Apple in appearance as well as in quality, bringing a high price in the market; Damsel's Seedling, better known in Covent Garden as the Wellington, much esteemed for its fine cooking qualities; Hawthornden, a fine early sort, the trees rather liable to canker, and never attaining a large size; Keswick Codlin, which is gathered very early, and sent to market in immense quantities before the other sorts come in, and which is one of the best Apples for cooking, and a most abundant bearer; Yellow Ingestrie a very beautiful and excellent early small yellow dessert sort, which does exceedingly well with Mr. Dancer; Hollandbury, a free-bearing, large, and handsome sort, but not of much merit; Beauty of Kent; Red Quarrenden; Rymer or Duke of York, a fine late culinary variety; King of the Pippins, a very excellent market sort; Small's Admirable, already noticed; and Braddick's Nonpareil, a very excellent sort, fine for dessert use in winter. There are, besides, many others too numerous to mention, the fruit of which are all of fine quality, large, clear, and handsome, and nearly all produced on the large old standard trees, which receive no attention further than keeping the shoots and branches thin, so that plenty of air is admitted to all parts of the tree. It is this which makes fine fruit, and the trees are always in vigorous health through the manuring and digging of the ground about their roots. Lastly, but not least, I must notice a fine lot of Cox's Orange Pippin. When this Apple came first into repute, Mr. Dancer, who is ever eager to introduce a good variety, and more than usually fond of experimentalising, had some old trees cut down and grafted with this sort. These have now formed large heads, and were last season loaded with most splendid fruit. The branches were bending to the ground with their heavy load. The two-year-old shoots from 2 to 3 feet long, which had been unpruned, were thickly clustered. I counted from one to two dozen on each, fine and handsome, high in colour, and rich in flavour. What a splendid Apple this is, and it is also a profitable one to cultivate.

Of Red Currants, Mr. Dancer is a great cultivator, and much attention is paid to them. Currants are but small fruit, and rather looked down upon; there is no crop, however, more profitable to the market gardener. The quantity of Currants sold in Covent Garden during the season is enormous, and there are but few cultivators who grow them to such a large size as

Mr. Dancer, or in such quantities. What an amount of confusion exists with regard to the nomenclature of these fruits! We have scores of names, yet very little distinctive features amongst them whereby they may be recognised; some are said to be larger than others, some sweeter, some later, some earlier, some with short bunches, others with long ones; and there are all these different characters, yet in an ordinary field of an acre or so, professedly all of one sort, all the forms may be found. I have found them so in a field of two acres lately taken possession of by Mr. Dancer, while in his older grounds they are nearly all alike, uniform in growth, and uniform in the fruits. Out of all in the two acres already alluded to, Mr. Dancer and myself could only discover two or three bushes of what may be termed Dancer's stock, which is by far the finest of any I have seen. The plants are of rather dwarf and compact growth, never rambling much, the leaves in the mass having something of a metallic hue, very distinct, and the fruit is very large, produced very abundantly, and of a fine bright red. Plants of this sort only one-half the size produce quite as much fruit as large plants of the others. The difference between the two lots of bushes is remarkable; the one, with a few exceptions, growing very strong, with the shoots gross, and the fruits small and scanty; the other of stately growth, and always enormously loaded; yet they are all called Red Dutch, and have been most likely all propagated from the same stock. If I might conjecture, the one lot has been deteriorated through selecting all the strongest cuttings for propagation, without paying regard to any other quality; whilst the other, which I know is correct, appears to have been perpetuated by selecting cuttings from marked plants—plants of good habit, and bearing good fruit. Mr. Dancer hopes in a few years thus to throw light on this subject, and I only hope he may, for it is an important one.

Currants in market gardens receive very generous treatment, being planted in good soil, and well manured. They are generally planted at a distance of about 6 feet from each other in the rows. In pruning only four or five stems are allowed to each bush, all side shoots being closely cut off during the winter, and at the base of these the fruits are borne so thickly that they may be pulled off by the handful. This work is principally performed by women, scores of whom are employed for weeks in gathering the Currant crop.

Having now given a review of the principal subjects cultivated in this establishment, I shall in my next paper treat of the soil, pruning, &c., as compared with other districts, and with other practices in regard to fruit culture.—LEO.

(To be continued.)

APPLE KEEPING.

My fruit room was built in 1761 by a great man, for he was my great grandfather, so it follows of course that he was in one sense great. It is an arched cellar, 40 feet long, 12 feet wide, and 7½ feet high. It was originally a wine cellar, but for many years it has been used as a fruit room. In the centre is a broad pathway, and on each side are shelves, on which the Apples and Pears are placed on the bare boards. It is ventilated by only one aperture, 3 feet by 2, in the wall at the north-west end just under the crown of the arch. This aperture, which has an iron grating, has a shutter with which it is closed in very severe weather. This closing is, however, of rare occurrence, for the shutter has not been used to any extent either this or the past winter. The perfect dryness of the cellar is owing to its having a range of packing sheds over it, so that the soil resting on the arch has become in the course of years a mass of earth dry as dust. The temperature of the place is most remarkable for its evenness, ranging from the middle of October till the middle of March from 45° to 47°, the former being the rate from the middle of November till the end of February, seldom varying half a degree. This low even temperature, with a supply of fresh air without draughts, seems very favourable to the preservation of Apples and Pears, for early autumn Apples, such as the Hawthornden and several others, keep plump and sound till Christmas and even later. To the feeling my fruit room is agreeably warm in severe weather in winter, and agreeably cool in hot weather in summer.

I may add that my unique fruit room was formed by scarping part of a steep wide fosse dug out on the crest of this hill (Bonks Hill), seemingly as a temporary mean of defence when, in the parliamentary times, some skirmishing took place in this district, the direct road to Newmarket; for we have Man-

field, in which, when I was a boy, cannon balls and pieces of trumpets used to be found; and Deadland, in which may still be seen the outline of a trench in which the dead were buried, and over whom the corn is, I believe, even now of a deeper green than elsewhere. The former is now covered with trees, and in trenching the ground one or two skeletons have been found—one I recollect as having a stout iron dagger lying by its side.—T. RIVERS.

ROSE CUTTINGS—ROSES IN POTS.

In his remarks about Rose cuttings (page 122), Mr. Knott says, "I am assured that as soon as the buds start cuttings will strike most readily." Surely this waiting till the buds start must be a mistake. My aim in propagating cuttings, not only of Roses but of Vines, and, in fact, of any hardwooded plant, is to endeavour to obtain roots before, or as quickly as possible after, the buds start into growth; because it is a well-established fact that all growth made before the roots have started is of a "spindly" nature, tending only to weaken the young plant, while, on the contrary, if a cutting forms roots and shoots at about the same time and in equal proportions, a healthy and vigorous plant may be expected if fair treatment be given. Hence the advantage of the method of striking Rose cuttings, which I have fully explained in No. 410 of this Journal; for the cutting, by the warmth of the earth, is enabled to form roots, while its buds are kept in a dormant state by the cooler temperature of the air to which they are exposed.

As regards spring propagation, although a small percentage of most kinds of cuttings may grow, yet the most common and certain method is to take cuttings in March off plants which have been forced early, and whose wood, having shed its blossom, has attained the requisite ripeness for the purpose. The pots containing the cuttings are plunged in a mild hotbed, which is kept close till the cuttings are well rooted, which will be in about a month, when they are shifted into a cool frame, and when slightly hardened they may be either potted singly or planted in a prepared border. Such plants cannot be expected to equal in vigour those which, having formed roots during winter under the cool treatment, have been planted out in the open border in March, and which thus, in addition to a vigorous constitution unimpaired by any forcing, have a start of nearly two months over the spring-struck plants. Moreover, cuttings taken off forced Roses can never equal in vigour well-matured cuttings from plants in the open air. After the foregoing remarks I need hardly say that I have but little faith in the utility of spring-struck Roses.

Permit me to add a remark on pot Roses. So far as my experience goes, I am of opinion that no Rose is fit to produce blossoms worth looking at in a pot until it has been subjected to a similar treatment to that described in No. 410. After being so prepared the plants may be taken up, potted, pruned, and plunged at once in a mild bottom heat, with their branches fully exposed to the air day and night unless the weather become very severe. By the time they are wanted for forcing, such plants, with their stout healthy wood and abundance of roots in full activity, may fairly be calculated upon to afford the most satisfactory results.—EDWARD LUCKHURST, Egerton House Gardens, Kent.

SUCCESSION OF FRUITS IN AN ORCHARD HOUSE.

I HAVE a house full of Peach trees in pots, the fruit of which I expect to be ripe in May. How would it do to introduce then, or a few weeks sooner, a number of Vines in pots for a crop of Grapes, of course keeping the Vines back as well as possible until then? Would it do to keep them out of doors until then? or, if planted in a border, would it hurt them to pull them outside the house, which I could manage to do, until the Peaches were nearly ripe?—L. W.

[The best plan would be to keep the pots out of doors plunged in litter, and set on the north side of a wall or fence; there they will scarcely break much before the middle of April, and as soon as broken they might go into the coldest part of the house at first. If the Vines are planted inside the canes could be kept outside, but then the roots will be more excited by the heat necessary to ripen the Peaches in May. If the Vines are treated as the Peaches all along, the Grapes would ripen six weeks or so after the Peaches. If both Peaches and Vines are planted out, and two full crops are wanted to succeed

each other, the Vines should be kept as long as possible fully exposed to the air, but with glass above them. This is best done by having a moveable front, or rather two fronts to the house—the inner one being used when forcing the Peaches, and the outer one, with the Vines between the two, when the Vines are too forward for complete exposure.]

EUCHARIS AMAZONICA NOT FLOWERING.

SEVERAL plants of this were perfectly flowered last season by me. They were moderately potted in rather rich sandy compost, and kept in a cool house or pit with a very moderate supply of water and plenty of air until the bloom-spikes began to be thrown up, then the pots were washed and the plants placed on a warm shelf in the stove, and well attended to with the syringe until the blooms expanded, which they did in a fortnight or three weeks after the plants had been taken into a temperature of 65°, with a rise from sun heat.—R. S. M.

[The South African bulb is probably a *Crinum*.—Ems.]

HAVING several fine plants of this beautiful Lily, I send you my mode of treatment. When the plants commence growing I give them abundance of liquid manure water, not too strong, until they have done flowering, then water is withheld, but they are not allowed to flag till the growth commences again. In potting I use nothing but good loam, and the same for top-dressing. Two plants growing under the above treatment in 26-inch pots, flower five times a year, each plant having from eighteen to twenty spikes, with six or seven flowers on a spike. They are in a temperature never below 50° at night.—J. S., Rockville Gardens.

UNDER the treatment I have adopted, I am rewarded with complete success in flowering it two or three times a year. I have a large plant of it 4 feet high, on a stage about 6 feet from the glass, and fully exposed to the light. Care is taken not to water it when required to flower; in fact, it seldom has any water even when growing. The soil in which it succeeds best, I find is loam, leaf mould, and a small quantity of sand, well mixed with one-fourth rotted cow dung. Overpotting checks flowering and causes growth. On the one plant I have had sixty-five blooms successively last summer; it flowered a second time in the month of November, and it has again rewarded me with eleven spikes, five and six large blooms on each spike.—EDWIN NEWMAN, Edge Hill, Liverpool.

I BELIEVE that the chief secret of flowering *Encharis amazonica* is to leave it alone, when once potted in, say, an 8-inch pot. When established there it will not require repotting oftener than once in two or three years, and will flower freely enough as soon as it becomes pot-bound; while, if continually shifted and disturbed, it will grow largely and never flower. I saw a beautiful plant last year which had not been shifted for five years. My own plant does well in a moderate bothouse, in a temperature suited for Cattleyas and such *Dendrobiums* as *D. nobile*.—Duckwing.

COLOUR OF THE BACKS OF ROSE PETALS.

THE colour of the reverse of Rose petals is a subject, I think, of some importance, and one to which more attention should be directed, especially in the selection of new Roses from description. How is it that many of our finest-shaped Roses are dull and unattractive? Simply because certain forms of the flower exhibit the backs of the petals much more than others of a flat or rosette character; and the finer the shape—that is, the more globular and deeper the cup of the petal, the more its reverse is shown. In nearly all red Roses this is of a dull purplish tint, which tones down very sensibly whatever brilliancy of colour the face of the petals may possess. This is evident when we consider that fully one-third of the back is exposed in our finest models of shape—cupped, high-centred, and globular flowers, such as *Lelia*, *Alfred Colomb*, *Comtesse de Chabillant*, *Pierre Notting*, *Prince Henri de Pays* Bag, &c.

Neither the beautiful old *Jules Margottin* with its shell-like petals, nor the brilliant *Senateur Vaisse*, would have held our hearts so long had they not shown us bright backs as well as faces.

In a former notice I ventured to give our continental neigh-

bours a hint as to our requirements. I now add another—Not to send us new red Roses less bright in the reverse of their petals than our old favourite *Senateur Vaisse*.—HENRY CURTIS, *Devon Rosery, Torquay*.

ROYAL HORTICULTURAL SOCIETY.

MARCH 2ND.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Thomson, of Dalkeith, sent three handsome bunches of a seedling Grape, which has been named "*Thomson's White Lady Downe's*," because of its being a seedling from Lady Downe's, crossed with *Blackwood Mascat*. The parentage of this Grape is apparent on examining the fruit, for in form of the bunch and berries, and texture of the flesh, it is identical or nearly so. Mr. Thomson in a communication to the Committee, states that the Vine is, if possible, more vigorous than that of Lady Downe's, of the same habit, and may be grown along with that variety in a house with no more than greenhouse heat to ripen the fruit. Last year, Mr. Thomson states, he kept the Grapes in good condition on the Vine till April, but this season the unusual heat of February stimulated the sap in the Vines so early that the flavour of the fruit has in consequence been adversely affected. The Grape was much admired by the Committee, but from the cause just stated the flavour was deficient, and not at all equal to what a member of the Committee stated he had discovered in it at an earlier period of the season. It is to be hoped that Mr. Thomson will show it earlier next year. There can be no doubt that it will form a valuable white companion to the old Lady Downe's.

Messrs. Stuart & Mein, of Kelso, sent a collection of Variegated Kale in pots, which produced a pretty decorative effect on one of the side tables.

Messrs. Barr & Sagden submitted a communication from D. Crawford, Esq., of Oporto, on the mode of culture of the large Portugal Onions imported to this country.

FLORAL COMMITTEE.—The Rev. J. Dix in the chair. The wintry and stormy morning prevented many exhibitors from bringing their plants, and although the room was not so well furnished as usual, the Orchids formed a very interesting feature. Messrs. Veitch contributed this class of plants largely, and received a special certificate for their collection, also a special certificate for their collection of spring flowers, among which were some superb *Azaleas*, *Camellias*, *Roses*, *Hyacinths*, *Rhododendrons*, &c. A first class certificate was awarded for *Phormium tenax*, var. *Veitchii*. Mr. Berkeley has carefully examined the varieties previously shown, and finds that *Cookii* and *Colensoi* are the same; it is proposed, therefore, to remove the name of *Cookii* altogether. The distinction between *P. tenax* and *P. Colensoi* appears to be that *P. tenax* has its leaves split or divided at the points, whilst those of the other are not. Mr. Sherratt, gardener to James Bateman, Esq., Knyppersley, sent specimens of cent. Orchids. The very beautiful *Bletia Sherrattiana* received a first-class certificate; also *Ipeea speciosa*, with bright yellow flowers. This is a very rare species, and has been only flowered by two Orchid growers. Mr. Forsyth, gardener to Baron Rothschild, Gunnersbury, sent two very fine specimens of *Dendrobium macropphyllum*, and a special certificate was awarded them. Mr. Warren, gardener to T. J. Lovett, Esq., Borton-on-Trent, brought out specimens of *Epipedium macrochilum album*, which received a special certificate. A small collection of plants was sent from Chiswick. A collection of Orchids from the garden, South Kensington, received a special certificate.

Mr. B. S. Williams, Holloway, sent a small plant of *Thrinax nobilis*, too young to display its merits, as well as a variety of *Adiantum capillus-Veneris*, which it was requested should be sent again. Mr. Williams likewise exhibited a very beautiful group of Orchids, which deservedly received a special certificate. Mr. Stone, gardener to J. Day, Esq., Tottenham, brought *Dendrobium Williamsonii*, the plant too young for a decision to be arrived at as to its merit. Messrs. Lee, Hammersmith, sent *Thuja Lobbi aureo-variegata*, a very promising plant, which was awarded a first class certificate. Mr. Turner, Slough, brought a small plant of *Colera Princess Royal*, one of the Society's best seedlings; also some fine specimens of *Anemone* berries produced in the open air, and which were unusually large and bright-coloured. Mr. Ware, Tottenham, sent a basket containing three kinds of *Primula*—viz., denticulata, amoena, and *erosa* or *Fortuni*; also a basket of spring flowers—among them *Orobis vernus*, *Dianthus hybridus striatus*, *Arabis heterophylla*, *Iris persica pumila*, *Iris reticulata*, *Hepatica triloba carulea*, and *Anemone hortensis*. A special certificate was awarded for the two collections.

Mr. Bull sent a specimen of *Lycaste Skinneri* of dwarf habit, and *Amorphophallus pinnatus*; the foliage had been removed from the plant, and this gave the dark reddish brown spathe a very singular appearance. Messrs. Paul & Son, Cheshunt, sent a superb Rose, Duke of Edinburgh, a finely formed brilliant scarlet flower with fine foliage, and it was awarded a first-class certificate; also a cut specimen of a sport from *Camellia Aulica*. Messrs. Standish & Co. exhibited a new *Todea* which has sprung up in their store in large quantities. It was supposed to have come from *Todea pellucida*, but is of an entirely different character. It was named *T. pellucida compacta*. A first-class certificate was awarded it.

Mr. Wilson, gardener to W. Marshall, Esq., sent some very beauti-

ful Orchids, among them some fine *Odontoglossum triamphaus*; two distinct varieties, which received first-class certificates, were named the one *O. triamphaus Marshallii*, the other *O. triamphaus Wilsoni*. Mr. Green, gardener to W. W. Saunders, Esq., brought a few very interesting plants—two fine specimens of *Amarylhis Ackermannii pulcherrima*, cut specimens of *Pachisia macrantha*, an old but beautiful flower, and two pretty specimens of *Lopezia superba*. A special certificate was awarded. Mr. James Loper, gardener to E. Salt, Esq., Baildon, Leeds, brought a spike of *Odontoglossum Hallii*, for which a special certificate was awarded. Mr. Masterton, of the firm of Maxley and Watson, exhibited their Packington plant-trainer, which is so constructed as to be moveable and fixed on any-sized flower pot. There are more disadvantages than advantages in its arrangement, and the Committee did not approve of it.

GENERAL MEETING.—J. Bateman, Esq., F.R.S., in the chair. After the election of fifteen new Fellows, the Chairmen of the Fruit and Floral Committees reported the awards, and the former stated that in accordance with the suggestion of Mr. Wilson Saunders at the last meeting—that it would be desirable to know how the fruit then exhibited had been preserved—circulars had been sent to the principal exhibitors, and from the replies received, the Committee had found that, as a rule, the fruit had been put on plain boards, and the greatest care had been used to handle it as little as possible. In one or two instances sawdust and cork dust had been employed. Mr. Porteus having then been invited to make some remarks on the Kamquat, said he would communicate in writing what he knew about it before the next meeting.

Major R. Trevor Clarke remarked, with regard to the influence of light on the keeping of fruit, that it is a common notion that darkness is favourable to its keeping, but he had observed it kept as well in the full light; also that if fruit were frozen it did not rot if kept in the dark till thawed.

The Rev. M. J. Berkeley in offering some remarks on the plants before the meeting said, in reference to the *Solanum* exhibited on the 16th ult., that he had found the word "*guisados*" simply means capable of being cooked, the fruit being probably of the same culinary merit as that of the Egg plant. With regard to the different kinds of *Phormium*, he believed them all to belong to one species. From an examination of specimens he had found *Phormium Cookii* was the same as *P. Colensoi*, and the former, therefore, would have to be eliminated altogether; further, the only real difference between *P. Colensoi* and *P. tenax* appeared to be that the leaves of the former were split at the tips, those of the latter not split; consequently he believed the kinds exhibited to be merely four forms of the same species. Banks and Solander, who were well acquainted with the genus, considered that there was but a single species of *Phormium*. A singularly knotted truncheon, from an Elm, seen by Mr. Bateman at Pau, was next referred to, and Mr. Berkeley observed that on a former occasion he had brought a specimen from a garden in Rutlandshire, with similar knots at every node, and which were attributable to the formation of adventitious buds. A sprig of *Cupressus Lawsoniana* was next brought forward as remarkable for its elegance and the beauty of the male inflorescence. It had been suggested by some that the branchlet was one of *Cupressus fragrans*, but he would state that from a large quantity of the seeds of *C. Lawsoniana* which had been bought at a sale, and sown at Chiswick, many of the plants proved the same as *C. fragrans*, which, therefore, was probably a mere variation from seed, and not a distinct species. After mention had been made of *Anemone blanda* as being probably only a form of *A. apennina* coming into flower much earlier in the season, Mr. Berkeley, adverting to the *Primula*s exhibited, said he believed the powdered plant to be the true *Primula denticulata*, and that powdered to be properly named *P. erosa* or *Fortuni*. With regard to the small-flowered but elegant *Lopezia superba*, it had been suspected to be a mere form of the annual, *Lopezia coronata*, but it had maintained its perennial character, and was certainly a very ornamental plant at this time of year. Mr. Berkeley also mentioned that *Spiraea Thunbergii*, a plant of which was shown at the last meeting, could be worked on all sorts of Plum stocks. After brief reference to the *Todea* and *Adiantum* noticed in the Floral Committee report, Mr. Berkeley stated that the next number of the Society's Journal would shortly be in the hands of the members; also, that it had been determined, notwithstanding the very efficient manner in which the proceedings of the Society's Committees and meetings are reported in the horticultural press, to bring out reports of the meetings in slip, to be afterwards make up in sheets or half sheets along with original papers, and ultimately collected in a number of the Journal. Arrangements would be made by which Fellows desiring to have the slips as they appeared could have them sent by post.

Mr. Bateman said, when he found the unfavourable character of the day had left him fewer plants than usual to comment upon—although the Orchids were well represented—he thought he would fall back upon the Elm stick before referred to, but Mr. Berkeley had appropriated it. He would add, however, to what that gentleman had said on the subject, that he saw the tree at Pau, last Christmas-day, and it was uniformly covered with knots varying in size according to the part of the tree, those on the stem being as large as one's head, on the major branches as large as a fist, and so on down to the size of peas. Being anxious a tree so curious should not be confined to the neighbourhood, he had obtained cuttings of it; so the Fellows might

be able to grow their own knotted sticks. Major Clarke had suggested it might be propagated in a similar manner to the Olive, and if so, every one of the nodes might be made to grow. Passing to the Orchids he would take the worst first, that being *Oncidium abortivum*, which makes continual abortive attempts to flower, producing nothing but filaments, the buds falling off. Mr. Williams, however, had succeeded in making it produce flowers, as seen by the specimen before the meeting, but the plant was not worth cultivating. Not so the beautiful variety of *Lycaste Skinneri alba*, which with its bridal colours of white and gold, well deserved its distinctive name, and he only wished names would be withheld when varieties were not equally distinct. *Odontoglossum Alexandrae*, of which specimens much finer than those shown were to be found at Mr. Rucker's, and in other private collections, Mr. Marshall's *Odontoglossum*, Mr. Salt's *Odontoglossum Hallii*; *Dendrobium macrophyllum*, and the white variety of *Epidendrum macrochilum*, from Baron Rothschild's, were then briefly noticed; likewise the fine specimen of the new *Dendrobium lasioglossum*, from Messrs. Veitch, which showed what a treasure it would be. From his own gardener came flowers of *Dendrobium luteolum*, one of the most desirable of its race, and which remains in perfection for two or three months, and of *Ipsea speciosa*, which, though it had been in the country for nearly thirty years, had never flowered with him till last year, and had only flowered in one other garden. He had the bulbs from Kew, where, he was glad to say, owing to the liberality of the Government, a new Orchid house had been erected that would enable Mr. Smith to do justice to this class of plants. Of Bletia Sherrattiana his (Mr. Bateman's) gardener had also sent a branch of a spike, proving it, however, to be really the prettiest of all the Bletias. Mr. Bateman next asked if any of the Fellows present had succeeded in grafting the Kumquat (*Citrus japonica*), as he had been informed that success is hopeless unless *Limonia trifoliata* is used as a stock. Mr. Bateman said, as a solemn silence prevailed, he must infer no one present had succeeded; but he had learned that Major Clarke, who generally met with success where no one else did, had sown the pips and so raised plants. The plant, grown not in a pot, but turned out in a border, was from 8 to 10 feet high, and covered with delicious fruit. Mr. Bateman concluded by directing attention to the Packington plant-trainer, which he thought would be very useful.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE anniversary meeting of this Society was held on January 25th, when Mr. H. W. Bates was re-elected President, and the other officers were re-elected. The President's anniversary address was read in his unavoidable absence by the Secretary, and was ordered to be printed.

The first meeting of the Society during the past month was held on the 1st ult., the President being in the chair. After returning thanks for his re-election, he nominated Messrs. Stainton, Smith, and A. R. Wallace as the Vice-Presidents for the ensuing year.

Amongst the entomological works presented to the Society since the last meeting, were the second volume of the great Bibliographical work undertaken by the Royal Society, the eighth volume of M. Lacordaire's work on the genera of Coleoptera, containing the first half of the Longicorn Beetles, &c. The President's address delivered at the anniversary having been printed, was distributed among the members.

The Secretary read a letter from Mr. Butterfield, of Indianapolis, desiring to enter into communication with English Lepidopterists. Mr. Edward Saunders exhibited a fine specimen of the rare moth, *Pachetra leucophaea*, taken at Redhill, near Reigate, by Mr. N. E. Brown. Mr. Pascoe made some observations on the exotic Coleopterous genera, *Aprostoma*, *Mecodanum*, and *Gempylodes*, contending that the first of these insects, considered by Professor Westwood as a *Colydian*, belonged to the *Brentidae*. The Professor reiterated his opinion, which he had formed upon a dissection which he had made in Paris, of M. Guerin's original type specimen.

Professor Westwood gave an account of the habits of a species of *Aphidæ*, which he had already described under the name of *Peritymbia vitisana*, and which has subsequently received in France the name of *Rhizaphis vastatrix*. This insect has only quite recently appeared in some viciaries in this country, where it attacks the young leaves, causing them to swell into round protuberances, or galls, the upper side of which split into fimbriated divisions, beneath which the small female insect is buried, and where she deposits her eggs. Other specimens, which can in no wise be distinguished from those on the leaves, suck the rootlets beneath the surface of the ground, and cause the death of the plants, the latter process having occurred to a ruinous extent in some parts of France. Mr. F. Small, with reference to this double habit, mentioned that he had once found in Bishop's Wood, Hampstead, a mass of harnacle-like galls upon the bole of an Oak tree a foot above the ground, from which a number of wingless Gall flies had been produced, which he could not distinguish from the ordinary *Cynips aptera*, which he had reared from Currant-like galls on the rootlets of the same tree.

Mr. Butler exhibited a drawing and read the description of a new Indian Butterfly, belonging to the genus *Hesima*, Westw., named *H. zella*, resembling *Danaus juvena*.

Mr. Horne exhibited the stings of two Indian Scorpions, which had been killed by a rat, at Benares, these animals having been placed for

observation under a bell-glass. After considerable fencing the rat suddenly made a spring and bit the stings through the middle, thus disabling the scorpions, which it then leisurely began to pull to pieces and devour.

PACKING FRUIT.

IN your Journal of the 25th ult. there is a letter from "H. R. F., Floors Gardens," on the packing of fruit. His remarks on paper shavings may be good, but in many localities they cannot be obtained even at 28s. per cwt.; therefore I contend that my plan, with the Grapes wrapped in thin tissue paper, moss top and bottom, with a division for each bunch, is far preferable. Peaches, Nectarines, Figs, &c., have a small division for each fruit; and when a little cotton wool or wadding is used there is no fear of bruising, as only one tray is used for each layer of fruit.

There seems to be a great diversity of opinion as to packing fruit to be conveyed long distances; but when you take into consideration that no cord, nails, &c., are required in my cases, as shown in the woodcut in your advertising columns, I think they meet the objections of many of your correspondents.—W. F. CHAPMAN, *Llandudno*.

THE PORTABLE ORCHARD.

(Continued from page 142.)

I WILL begin with Apples, and first say what I know about the stocks, or "subjects," as they are sometimes called. Everyone knows what the common Crab is, and in soils where it thrives it is commonly used for hedges, as in this district; it is a very good stock for most varieties of Apples, but not for all. One of the reasons why the Golden Pippin and Ribston Pippin are scarce, and when seen are generally unhealthy trees, is because they have been worked upon the Crab, which does not suit either of these varieties. The Crab is of moderate growth, and where the scion is from a very small-wooded variety, or from a very vigorous one, there is not the uniformity of growth above and below the junction of the graft to keep the tree in health; also in all likelihood there is something in the sap that disagrees with the digestion of the scion.

Apple seeds sown, produce what are called "free stocks," and from amongst the seedlings all sorts of growths may be found, some very feeble, and others most vigorous, and no doubt these offer to an experienced man a most useful range, so far as growth is concerned. A stock slightly more vigorous in its habit than the variety to be grafted on it can easily be selected from a bed of free stocks; but we cannot be sure that we have one that will agree with its scion, or that will not affect the fruit to its detriment. These offer the widest field for experiment.

Then there are Paradise stocks; and of these, again, there are several varieties in the market. The true French Paradise is a very small fine-wooded tree, and, as might be expected from its habit of growth, it dwarfs the scion; but the result is to make the tree prematurely fruitful, and at the same time the fruit is excellent in quality.

There is a stronger-growing variety called the English Paradise, and a similar one in France called the Doucin, and probably several varieties of these Paradise stocks will be found under one name.

Many disputes have been maintained about the success of trees worked on the Paradise stock, but it is only within a few weeks that careful comparison has been made of the stocks themselves, and then it has been found that the disputes were caused by supposing stocks sold under the same name to be really the same variety. I have had four or five different varieties under the name of Paradise, and have found some excellent, and others so delicate that the first severe frost killed them. Great caution, therefore, is needed in using the Paradise stocks; a couple of years' growth before they are grafted will show what their nature is better than anything. With all of them, however, the final results—the Apples, are good.

We owe to Mr. Rivers the introduction of two new seedlings of his own raising, that promise to be universally available. He has named these the Broad-leaved Paradise and Nonsuch Paradise.

With these stocks is to be classed the old Burr Knot, for like the whole of these Paradise Apples it grows freely from cuttings, and puts out roots from any portion of the stem placed in the ground; it even shows its tendency to make roots in the air by forming knots every here and there on the branches, and if a branch be cut off, leaving one of these knots at its base, and

planted, it is sure to grow. This rooting habit, however, is more valuable from the quantity of root fibres thrown off near the surface of the ground than for the facility of propagating from cuttings, although this also is a most useful property.

Stocks, of whatever kind, ought to be planted at least a year before they are worked, though to preserve a variety of Apple in order to make use of the scions the next season, the stocks may be grafted even at the same time they are planted; but such treatment will rarely produce a good tree. As the stocks are not costly, and occupy only a small space, it is always well to plant a fair number of them; when they are converted into good sorts they are easily disposed of, for cottagers are always thankful for them. Graft the stocks in the open ground, and defer the potting till such time as a selection can be made from the most vigorous of the young trees. I often plant the stocks in pots from the first, and so save some part of the trouble; but beginners must expect failures, and the disappointment is less where less trouble has been bestowed.

The stocks should be planted in rows at about a foot distance from each other in the rows; two rows may be put a foot apart, and then a space of 3 feet should be left before another row is planted. The object of leaving the wide space is to enable anyone to work safely, for if you kneel down with too little space between the rows you will most likely break down a large portion of the row behind you. The planting may be done in October, November, or February, or even as late as the middle of April, if you take care to water in dry weather. —W. KINGSLEY.

(To be continued.)

THE CHERRY PLUM.

I THINK the Cherry Plum, or as it is sometimes called the Roblet Plum, is worthy of more extensive cultivation. About eight years since I gave a plant of this to a friend, who planted it against a south-east wall. It grew very fast, bore fruit the third year, and has continued to bear well every season since. Last season it bore five pecks, which the owner sold for £1. It is very rarely affected by blight, makes a good pyramid, but the fruit is not quite up to the mark in flavour; nevertheless at the time it is ripe—the beginning of May [*sic* August?]—it has nothing to compete with, consequently finds a ready sale.

A pyramid in a pot is a most lovely object in a greenhouse early in December, and when out of flower it can be removed to an orchard house to fruit. With this treatment it succeeds well with me. I have seen very handsome plants of this Plum in pots at the nurseries of Messrs. Lane, Berk-hampstead. —W. F.

VISITS TO GARDENS PUBLIC AND PRIVATE.

M. LINDEN'S, JARDIN ZOOLOGIQUE, BRUSSELS.

WHEN one sees the amazing number of novelties that year by year some of our leading horticulturists at home and abroad are enabled by their zeal and enterprise to bring under our notice, and when we hear of collectors going north, south, east, and west, we sometimes think that lovers of new plants will be like Alexander, sighing for some new world to conquer. They may banish such thoughts, for there are in many quarters of our globe fields which will still reward with abundant treasures those who seek to dig in them, and perhaps vegetable wonders far exceeding any we at present have may be ours to chronicle. For instance: when one reads with an entomologist's zest (for I plead guilty to an early love for that branch of natural history), the account of Bates's researches in the valley of the Amazon—while I felt what a grand time it must have been for him, the thought occurred, if the adage is true "that where there is smoke there must be fire," so it is equally true that where there are insects there must be plants; and I wondered into what deep bells did those gorgeous butterflies dip their proboscis, or on what juicy herbs their larvæ fed, and who would be the botanical collector who would dare the heat, miasma, and diseases of that seething region? The question has been long since answered, and one of the most successful botanist collectors of modern times, M. Wallis, has been in the service of M. Linden, of Brussels, engaged in exploring those regions, and on a visit I paid to his world-renowned gardens in November I had an opportunity of seeing enough of novelties and rarities to satisfy the most greedy glutton, while there is promise of still further additions in seed-pans full to overflowing of rarities sent home from the Amazon and other quarters.

Time would not permit me to linger over these things as I

could have wished, nor to chronicle them here as they deserve; but I will just name a few of those which most struck me. Among fine-foliated plants there was a large number of that already numerous family *Maranta*. To the fine kinds already known as *Veitchii*, *roseo-picta*, *illustrata*, *Lindeni*, &c., are now to be added *M. undulata*, *princeps*, *eburnea*, and *cineræa*, very dwarf, with ashy-grey leaves. Then there was *Sphærogyne imperialis* with a most beautiful undulated leaf; *Ficus decaloba* having the under side of the leaf covered with a downy white tissue. *Geonera Eppai tessellata*, every leaf of which seemed to be done by a crimping machine; *Drymonia turrialvæ*, a Gesneraceous plant with wonderfully thick leaves; *Pittonia gigantea*, a large-growing form of *Gymnostachyum Verschaffeltii*; *Anthurium trilobum*, with most singularly formed leaves; a new *Cissus*, with large heart-shaped leaves and silvery markings; an *Echites* with leaves like *moire antique*; and *Cyanophyllum spectandum*, with a beautiful light purple back, a fitting companion to *C. magnificum*.

Among plants remarkable for their flowers, I noticed a new *Goodyera*—*splendida*, with long panicles of white flowers like a Lily; *Bertolonia primulina*, a most beautiful plant, the leaves all arranged regularly round the centre of the plant, from whence issue bouquets of large rosy-coloured flowers very like those of a *Primula*, hence its name; it is from the State of Ecuador, and will, I believe, be a great favourite when known; *Tillandsia Lindeni*, shown at Paris as *T. cyanea*, where it excited great attention, having a spathe 16 to 18 inches in length, the flowers of a delicate sky blue, and the whole appearance of the plant very striking. *Aristolochia cordifolia* is a wonderfully large-habited creeper, almost too large for the general horticultural public, but fine for large conservatories. Far more generally useful, however, and extremely curious is the pretty *Aristolochia Ducharteri*. In this the foliage is much smaller; the flowers are not large, but most curiously-marked, the interior presenting almost the appearance of a printed calico.

It is not solely in plants already in growth and flower that M. Linden has his stores of novelty; seed-pans all over his houses bristle with stiff and vigorous plants, from seed sent home by M. Wallis. Among them are some *Melastomads*, of which he was kind enough to show me sketches, and which will, I believe, eclipse anything we have in that family, fine as the plants that we know are. Some of them had flowers 7 or 8 inches across, with petals as stiff as those of a *Camellia*, and others produced clusters of richly-coloured flowers of large size.

Of Orchids, too, M. Linden has a rich and varied selection, probably the richest, as far as novelty is concerned, in Europe, and to this he is constantly adding. He has now between forty and fifty new species, and many of these promise well. They were not in bloom at the period of my visit, so that I can only say what M. Linden expects.

There are amongst Ferns two species which will, I think, cause a sensation, even satiated as we might seem to be with wonderful and beautiful forms, yet have I rarely seen any which more attracted me to them than these. They are of the already rich and much-valued family of *Adiantum*, to which its almost latest addition has been that charming *A. fuleyense*. These two are, however, much larger, while possessing the graceful pendent form that characterises that beautiful Fern. *Adiantum Mathusianum* has long, graceful, pendent fronds, the pinnae of which are somewhat heart-shaped, the fructification running like a cord round the edge of the lower surface, and the pinnae being $1\frac{1}{2}$ inch in length, and about 1 inch wide. Still more beautiful, however, I think is *Adiantum speciosum*. This, too, has a graceful pendent form, but the pinnae, which are nearly 2 inches long, are very deeply cut, and almost present the appearance of Oak leaves of the most delicate and fragile character, and it is certainly one of the most lovely Ferns that we as yet know.

The stages in one of M. Linden's houses were all covered with earth, and on inquiring the reason he told me that it was sent home from the forests of the Amazon, and that he hoped to obtain from it some additions to his stores of novelties. It was in this way he obtained *Pteris tricolor* and other plants. How rich must such a land be, when its surface soil is so largely stored with riches as to make it worth while to send it home some thousands of miles in the hope of obtaining something from it. I should add that there are also here upwards of fifty new Palms, which will tend to make that family more looked after. The taste for them is now beginning to develop itself in England.

Such are the hurried notes of my visit, and I have to thank

M. Linden for the extreme courtesy and kindness shown to me, in allowing me to see his wonderful collection of novelties, and in himself giving me such information as I needed.—*P. Deal.*

STOPPING BLEEDING IN VINES.

HAVING seen your answer to "X. Y." respecting the bleeding of Vines, I send you my experience of Thomson's Styptic as a preventive. I was troubled with the bleeding of a few Muscats and West's St. Peter's near the warm end of the house at pruning time, and I sent for Thomson's Styptic, but I found on applying it that it was of no use whatever when Vines were bleeding in stopping the bleeding; nor do I think that Mr. Thomson intended it for that purpose, as his directions say, Let the ends dry six hours before applying it.

The plan I have tried this winter with complete success is as follows:—With a red hot iron I burnt the ends of the shoots, and held the iron there till the cut was quite dry. I then applied the best sealingwax, pressed it till it was set, and in no case did it fail me. I tried the hot iron, and then put on Thomson's Styptic, but it was of no use, as the Styptic does not dry sufficiently fast. The ends of the Vine shoots must be dry before applying the wax, which, of course, with anyone assisting can be done immediately.—WILLERSLEY GARDENS.

POMOLOGICAL GLEANINGS.

It will be remembered that Mr. Rivers exhibited at the meeting of the Fruit Committee, on February 16th, a large and interesting collection of APPLES, which was worthily awarded a special certificate, not only for the great variety, but for the general excellence of the specimens, many of them at this season, when Apples have been found generally to keep badly, being quite as fresh, crisp, and juicy, as any Apple need be. It may, therefore, be interesting to record which of them have kept the soundest, all having received the same treatment, and may possibly also prove some guide to those who having only a limited supply, yet desire to have good sound fruits at all seasons. With this view the following notes and short description of the fruits have been taken.

1. *Calville Blanche*.—Smaller than usual. Skin yellow, with a flush of dull red on one side. Flesh yellowish, sweet, but not so tender as usual. More like Calville St. Sauveur.

2. *Baddow Pippin* or *Spring Ribston*.—Medium-sized. Skin greenish yellow flushed with crimson, and roughly russeted near the eye. Flesh greenish white, tough, sweet, but not rich. Would keep well.

3. *Nonpareil*.—Tender, sweet, and excellent; in good condition.

4. *Patronaster*.—Large, Reinette-shaped. Skin clear yellow, flushed and streaked with bright scarlet, very beautiful. Stalk long. Eye deeply set, large. Flesh yellowish, firm yet tender, rich, sweet, and excellent. In first-rate condition. Altogether a first-class dessert fruit.

5. *Gooseberry*.—Large, irregular. Skin clear pale yellow, with only a little russet near the stalk. Flesh nearly white, exceedingly firm, crisp, juicy, and briskly acid. In remarkably good condition. A first-class cooking variety.

6. *Rymer* or *Caldwell's Keeper*.—Fair size, regular. Skin pale yellow, flushed and streaked with scarlet on the sunny side. Eye wide open. Flesh firm, juicy, subacid, in excellent condition. A fine and esteemed culinary variety.

7. *Winter Peach*.—Large, smooth, regular. Skin pale straw-coloured, with whitish spots under the skin. Eye large, deeply set. Flesh pale, very fresh, crisp, and juicy, sweet but not very rich. In excellent condition, as fresh as if just gathered.

8. *Sturmer Pippin*.—Medium-sized, smooth, regular. Skin greenish yellow, dull red on the exposed side. Flesh greenish, tender, juicy, slightly acid. Fruit firm, in good condition.

9. *Mannington's Pearmain*.—Medium-sized, regular. Skin straw-coloured, considerably suffused with scarlet on the exposed part. Flesh firm, sweet, but becoming dry and mealy. Past its season.

10. *Allen's Everlasting*.—Large, flattened, rough. Eye large, open. Skin lemon-coloured, bright scarlet on the exposed side, splashed and streaked with russet all over the fruit. Flesh firm, sweet, rich, and excellent. In fine condition. A first-class dessert sort.

11. *Reinette de Cuzy*.—Large, upright Codlin-shaped. Eye large, sunk. Skin of a uniform deep straw colour, with numerous brownish spots. Flesh firm, juicy, tender, sweet. A splendid kitchen sort. Fruit in fine condition.

12. *Dumelow's Seedling*.—Medium-sized, regular. Skin straw-coloured, flushed and streaked with crimson. Flesh firm, juicy, with a fine brisk acidity. Excellent culinary sort. Fruit in excellent condition.

13. *Melon*.—Fruit large, regular. Eye small. Skin clear, pale yellow, flushed and streaked with scarlet, with a fine bloom. Very beautiful. Flesh firm, tender, slightly acid, and inclining to mealiness. Rather past its season.

14. *Royal Acetate*.—Medium-sized, regular. Skin greenish yellow, much flushed and streaked with scarlet on the exposed side. Flesh firm, sweet, but not rich. Rather past its season.

15. *Fallwater*.—Large, Codlin-shaped. Skin clear yellow all over the fruit. Flesh firm, tender, with a little sweetish flavour, and somewhat mealy. Fruit in fine condition. A good culinary variety.

16. *Rushout Pearmain*.—Medium-sized, flattened, regular. Eye very small. Skin greenish yellow, very smooth, with a little russet at the stalk. Flesh soft, juicy, with a sugar-and-water flavour. Out of condition.

17. *Cornish Aromatic*.—Above medium-sized, a little ribbed. Skin pale yellow, scarlet with slight streaks on the exposed sides. Flesh firm, yet soft, and wanting in flavour. Past its season.

18. *Yellow Bellefleur*.—Above the medium size, roundish, smooth, and regular, with a long slender stalk slightly inserted. Skin clear yellow, with a very slight tinge of crimson here and there. Flesh firm, yet soft, rather dry, and of very insipid flavour.

19. *Ladies Sweet*.—Large, regular. Skin pale yellow, slightly red on the exposed side, with streaks of russet. Flesh whitish, firm, rather dry, sweet but not rich.

20. *Woodwell's Matchless*.—Medium-sized, regular. Skin smooth, greenish yellow, a little red on one side, and streaked with russet. Flesh soft, dry, and mealy; sweetish. Past its season.

21. *Baldwin*.—Medium-sized, regular Pippin-shaped. Skin pale straw, deep red on the exposed side. Flesh sweet, soft, and dry. Past its season.

22. *Newtown Pippin*.—Large, regular Pippin-shaped. Skin of a uniform greenish yellow, with white speckles beneath, and a little russet near the stalk. Flesh firm yet tender, somewhat dry and mealy, sweet, but not rich. In fine condition.

23. *Boston Russet*.—Large, irregular in form. Skin rough, greenish, dull red on the exposed side, with streaks of russet all over. Flesh firm, but dry, and flavour passed. Fruit in fine condition.

24. *Reinette par Excellence*.—Large, smooth, regular. Skin of a uniform clear pale yellow. Flesh soft and mealy, with a sweetish acid flavour. Past its season.

FRUIT OF TACSONIA VAN-VOLXEMI.

I SHOULD be very much obliged by being informed whether it is a known fact that the beautiful greenhouse climber *Tacsonia Van-Volxemi* produces a delicious fruit. A nurseryman last autumn told me he had difficulty in keeping any of the fruit, the boys employed being so fond of it. The plant was covered with the large fruit. My own plant had borne the fruit, but they were taken off in a green state.—*M. D.*

[*M. Van-Volxem* told us himself that the fruit was delicious.—*EDS.*]

WELLINGTONIA GIGANTEA CULTURE.

THIS Conifer deserves more notice than it at present obtains, especially in the eastern counties of England, where its cultivation is in many instances given up. This is a mistake, as with proper treatment it will do as well there as elsewhere. When following my profession as a gardener in that part of the country, several gentlemen (speaking in reference to three or four scores of this tree under my care), have told me with a mournful shake of the head, that it was all of no use, as the trees were sure to die off. I was resolved that if death was to come to them they should be aided to encounter him.

When first planted, and the planting was done under the superintendence of one of the most eminent horticulturists of the day, proper pits were dug for them and filled in with manure and loam; also, the plants, being in an open park, were fenced in from cattle. So far so good, but on my taking charge of them two years after planting, they were not doing so well as might have been expected. My commencement with them was to thoroughly clean them, and mulch with manure from the cowyard to the depth of about 1 foot. This,

for the first year, had a beneficial effect on them, and on examining the roots in the following winter, I found they had taken entire possession of the top-dressing; the plants assuming a more vigorous look than formerly, though the leaders did not grow quite so fast as I wished. In the ensuing spring I gave the trees a good dressing of half-decayed leaves, which in the growing season had the desired effect, as the average length of the leaders was 18 inches, and splendid side growths were produced. Some of the leaders were as much as 30 inches in length. In addition to this, the mulching had entirely stopped the growth of the weeds, and the trees were capable of taking care of themselves, as in the summer of 1868 they needed no watering, and were growing beautifully, some of them being 8 or 10 feet high with corresponding side growths. The only care required was an occasional pinching-in of the side growths to keep them regular.—P. DIXON.

DESTROYING WIREWORMS.

IN reference to destroying wireworms, "brown manure rape dust" is reputed by farmers to kill them, and in this district we are often asked for it to spread on Wheat, Turnip, and Carrot land. It is generally supposed here that the wireworms feed on the rape dust until they burst, or are poisoned.—ANTHONY W. WILSON.

AN old friend of mine, a practical Sussex farmer, was for years very much troubled with wireworms in a certain field. He tried lime, soot, and various other things to no purpose, but at last he was advised to apply rape cake ploughed in the land, and it answered admirably. He crushed the cake to about the size of horse beans, and applied it as stated. It is eaten by the wireworms most greedily. My friend tells me he thinks that the wireworms must have died from repletion, as in that field he has not been troubled with them since.

Rape cake is an excellent manure, and if good in the farm why not in the viney?—AN OLD SUBSCRIBER, Reigate.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Artichokes (Globe), a crop may soon be planted for producing a late supply of heads; the young side shoots taken from the old stools may be placed in lines 4 feet apart, allowing 18 inches between the plants; or trenches may be formed 18 inches wide, and the same in depth, some well-rotted manure dug in, and the plants put out as above. *Asparagus*, be sure to salt all *Asparagus* and Sea-kale beds; little and often is best. The time is approaching for planting *Asparagus*; it should not be put in until 6 or 8 inches high. *Broccoli*, a sowing of a late spring sort may soon be made. *Cauliflowers*, seedling plants of these, *Cabbages*, &c., raised this spring, should be pricked off when large enough, in order to become stocky for final transplanting. As the future growth of the Cabbage tribe depends much on not being drawn when young, some attention should be paid to this point when the plants are in a seedling state, for the best after-culture hardly compensates for the first neglect. *Carrots*, see to the crop of the Early Horn, slugs are reported to be devouring it, although liming and sprinkling over with coarse sand have been practised. Nothing is better, perhaps, than cinder ashes riddled extremely fine, and the mere dust taken out; these, sown thickly over the ground, present such a sharp macadamised kind of surface, that snails and slugs are at the last point of starvation before they will venture on them. *Potato* planting should now be finished as soon as possible. *Potatoes* and *Onions* should on no account be intermixed, or shaded by other crops; there are, however, many, such as *Carrots*, *Parsnips*, *Turnips*, and all the Cabbage family, which will not only bear being slightly shaded, but in warm summers enjoy it. When, therefore, kitchen gardens are small, mixed cropping is a point to which especial attention should be paid. The mixture must, however, be arranged so as not to interfere with earthing-up or gathering.

FRUIT GARDEN.

Attend carefully to the protection of blossoms of *Apricots*, *Peaches*, and *Nectarines*, but remove the covering as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air. Have a supply of tobacco water in readiness to attack aphides immediately they make their appearance. See that all winter and early spring work amongst fruit trees is brought to a close forthwith.

FLOWER GARDEN.

As soon as the weather shall have become a little more favourable, a good collection of annuals, both hardy and tender, should be sown. For the latter a slight hotbed is requisite. The more choice hardy kinds should be sown in patches, and covered with a garden pot, taking care to remove it in the day, when they are coming up, and covering them at night. If any rough or unimportant borders of the shrubbery require to be made a little gay, and work presses, a mixture might be made of some of the hardier sorts, such as *Collinsias*, *Clarkias*, *Mallows*, *Larkspurs*, *Candytufts*, &c., and sown at random over the open parts of the borders after a thorough cleaning. *Dahlias* should be increased without delay. *Trobelias* should be potted and put into a dung bed. German and Ten-week Stocks should be sown in fresh soil in a cold frame, or on a bed that will soon cool down, and a few early German *Asters* on a slight heat. Look well to recently-transplanted trees and shrubs; do not allow anything to suffer either from wind-waving, or, in the event of dry weather setting in, from want of water at the roots. In the case of large plants which require securing against wind, use three strong tarred cords for each; fix them to the plant by means of a collar made of strong metallic wire, and thickly wrapped round with canvas to prevent its injuring the bark, and then tie them to strong pieces of oak driven into the ground at proper distances from the stem of the tree. For specimens in prominent situations, strong galvanised wires should be employed instead of cords, being neater in appearance; although somewhat expensive in the first instance, they will last a lifetime. See that rolling, mowing, &c., proceed in due course. Now is the period to lay the foundation of a fine lawn. Let all fresh turfing be completed forthwith. Early herbaceous plants overgrown may now be divided; the exterior portions of the stools should be reserved, and the interior rejected. Be sure in planting them again to introduce fresh soil. Cut in all coarse shrubs before the buds become too much advanced; this is a good time to prune *Holly* hedges. The period has now arrived when plants for out-door decoration require attention. Though prematurely, *Polyanthuses* in some places are in full bloom; seedlings should now be strictly scrutinised, and reference made to the properties that constitute a good flower. Protection not only from late spring frosts, but from cutting winds, will, however, still be necessary in many cases. Many have potted a portion of their stock of *Carnations* and *Picotees*, and there appears this year to be a much greater disposition to spindle among the layers than usual. Keep seedling *Ranunculuses* from frost, and throw mats over beds containing choice *Pansies*, the hoops over which ought to be at least a yard high in the centre.

GREENHOUSE AND CONSERVATORY.

A thorough revision of plants in the different houses where plant-growing and forcing are carried on in a mixed way is necessary sometimes during spring, and the present is as good a time as any, as the shutting-up of late vineries or Peach houses generally offers facilities for this arrangement, and, of course, for relieving the other structures. Exhausted forcing stock should by all means have a pit or frame fitted up especially for it. It should by no means be allowed to mix with the general stock. The amateur may carry out this principle with a small frame. A bed of fermenting material of a mild character is required, covering it 6 or 8 inches deep with tan, and preserving the heat by linings, and by mats at night. A bottom heat of 80°, with frequent syringings, and the plants plunged, will restore them to perfect health, and prepare them for another campaign. *Fuchsias* will be benefited by the application of clear liquid manure. Very liberal shifts will be necessary at this period, more especially for those intended for very large specimens. *Cinerarias* for late blooming should, if pot-bound, be shifted likewise. Let plants in need of water have immediate attention; nothing conduces more to the encouragement of insects than suffering plants to become checked through drought. By starting *Camellias* into growth about this time, and having their wood ripened early, they will be in full blossom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in spring. Proceed as diligently as possible with the repotting of such of the hardwooded greenhouse plants as require it. Climbers beginning to push should after this time be frequently examined to prevent confused growth. *Kennedias*, if crowded, should have their shoots thinned. *Ipomaeas* and *Thunbergias* being subject to red spider, should be well syringed, to prevent that pest gaining ground. Where large numbers of hardy shrubs are annually forced, either to decorate the drawing-room or the

conservatory, it is not desirable to pot a fresh stock every season, as a number of deciduous shrubs, such as Roses, Lilacs, Thorns, Honeysuckles, &c., may by proper treatment be made to bloom for several successive seasons. Select, therefore, the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage; those cramped for pot room shift into rich turfy loam in larger pots, and towards the middle of next month plunge them in an open situation in order that the wood may ripen early. Follow up propagation, and see that cuttings of young stock are carefully shaded when necessary.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE breezy days of the 26th and 27th enabled us, as the ground had become dry on the surface, to do a considerable amount of work in the kitchen garden, as hoeing, digging, turning over ridges, sowing Peas and Beans, and planting Potatoes. It is all very well to do work according to a specified time, but it is much better to do it according to circumstances. All crops will thrive better if sown or put in the ground under favourable circumstances, than when the ground is claggy and wet. It is better in such cases to wait than to hurry. A week later in sowing will be more than compensated for in the crop; and even the time of production, when contrasted with crops sown or planted in wet claggy soil, will be eight or ten days earlier. Scattered a little burnt earth, ashes, &c., over the sets of Potatoes to keep enemies from the sets; and to save the trouble of wire netting, &c., covered Peas and Beans with an incrustation of red lead in powder. For this purpose the Peas are slightly damped, a little of the powder sprinkled over them, and the seeds well stirred together with a stick until all are coloured. Very little lead goes a great way; a pinch or two would do for a sowing of small seeds. It is as well to have a pot or saucer for the purpose, and then less will be wanted each time in succession.

We found seeds treated as above last season, turned up with bill, nose, and claws, but not taken, and the turning-up was soon let alone. Neither birds nor four-footed depredators seem to partake of seeds so treated. If the non-partaking of seeds thus treated is general, there will be no danger of poisoning pheasants or domestic poultry, and in this respect confirmation is much desired. We ourselves have no proof that seeds treated with lead have been eaten, and we have tried nearly all sorts from Lettuce and Cabbage up to Peas and Beans. In this matter we cannot, however, speak so authoritatively as we could wish, and, in fact, for some years we almost gave up the practice, after finding some rows of Peas pretty well turned up, and without perceiving that the Peas had been taken, we yet found a couple of swelled dead rats in the vicinity. They most likely had taken a little of the lead. As a general fact, the colour seems to act to some extent as a deterrent. If there is something that keeps all such intruders away, and that without eating, a few pence for red lead would save many a yard of netting. When seeds are put in the ground as soon as thus coloured, we have not found the lead at all a hindrance to free healthy germination. The seed suffers, however, when kept long dry and above ground after such colouring. It is well, therefore, to colour no more than is wanted for a particular sowing. One caution as to the sower. When we have had cuts or scars on our fingers we have used an old glove for the hand, or a small scapula for dispersing the seed regularly. Even when the bare hands without wound of any kind are used, they should be washed well immediately afterwards, and care taken that none of the lead is left at the nails, as that in some cases might be dangerous.

Cucumbers in a frame had quite enough of bottom heat, but scarcely enough of top heat in such stormy weather; and as the frame had sunk more at the back than the front, it was raised about 6 inches higher, and all danger from steam, &c., guarded against. The banking-up the back all that higher, enabled us to raise the atmospheric temperature. We all know that wood is a bad conductor, but still it does conduct heat, though slowly, and once heated parts with it slowly. We have no doubt that for forcing purposes frames made of iron sides and ends, joined by rods at the corners, would be cheaper in the end, and answer the purpose better than either frames of wood, or pits with brick walls—that is, as long as the sides were surrounded with heating decomposing material, as dung. The advantage would be from the celerity with which heat from the outside would be conducted and radiated into the inside

atmosphere. For mere protective purposes where no heat was to be applied, as in cold frames and pits, the iron, on the same principle, would be much inferior to a brick pit, and still more to a strong frame or wall of wood. The last time we noticed nice-looking iron frames and iron for sashes, the gardener complained that he could hardly keep Lettuces, &c., in them during the winter. We can easily conceive how in severe frosts, with the outside of the iron plates unprotected, the air inside the frame would soon become almost as cold as that outside. Something would be gained if for such a mere protective purpose the outsides, at least, were well painted with light-coloured paint. But merely as a place for protecting plants the iron frame is much inferior to a brick pit, or even to a turf pit with coping, or a good frame of wood 2 inches thick. Paradoxical though it may seem, it is no less true, that we have seen frost penetrating 9-inch walls, that did not find its way through 2 inches of wood.

The above remarks may meet the case of "A FARMER," who can obtain some iron frames if we think they would suit his purpose. For mere protection, we consider them inferior to wood. If he means to place these iron frames in his yard, so as to use dung heat for Cucumbers and other crops, then we would say, Have them by all means, paint the inside of a darkish rather than of a very light colour, tar well the outside, and when dry, keep the fermenting manure packed up to within 2 or 3 inches of the top, to leave room for a board or slab to walk upon. We would rather in such cases not enter on the question of profit and loss, for it is seldom the farmer can give his attention to the details of gardening; but we have not rarely met with huge mounds of dung wasting their sweetness on the air for the most part of a summer, and during that time they might have been used for forwarding many vegetables without at all interfering with the ultimate value of the manure. Growing Cucumbers on such mounds would greatly depend as to profit on the intelligence and attention given.

From what has come under our observation, failures in farm-yards have not resulted so much from want of attention, for provided air is given early, very little is required, as from having too much bottom heat in the bed, and the extra atmospheric heat passing upwards through the soil instead of being partly sent inwards through the sides of the box. By this latter mode there is little danger of burning the roots—a very common source of failure.

FRUIT GARDEN.

As our work here was chiefly a continuation of matters already referred to, we shall just notice that now is a good time for preparing the material for renewing the beds of fermenting matter for

Pine-Apple Plants.—For all such beds, we have met with nothing better than a mass of good tree leaves, covered with a thickness of from 6 to 12 inches of tan, partly sweetened, but still fresh, before being used. Adding a little fresh ly means of a funnel will keep up the heat a long time, and in a fresh bed it is always advisable not to plunge more than half the pot at first, leaving a bank round it, which may be levelled down with a small hoe as the heat declines. No plant suffers more from rough usage and moving about than the Pine Apple. A leaf once cracked or bruised will never recover. Were we entering again on Pine-growing largely we would not mind growing young plants in dung heat, as one of the best modes of keeping them clean and healthy; but for the main stock we should prefer planting out and growing them in a bed of heated soil, the pipes for heating merely covered with a few inches of clinkers, brickbats, &c. When desirable we could send rich water among the clinkers. A bed thus well drained and heated would give the least trouble. Turning huge tan beds in houses used to be a serious affair. Much of that work, and the necessary despatch attending it, would keep people muscular. One of the chief causes of dissatisfaction when using hot water for bottom heat is having the heating medium too far from the body to be heated. Another evil is having the roots too near the heating medium, when that is higher than from 80° to 85°, for a very high temperature is enervating rather than invigorating. Though bottom heat is a very good thing, it is an easy matter to have too much of it.

ORNAMENTAL DEPARTMENT.

Hand-glasses versus Wooden Boxes.—A correspondent tells us, "I am much obliged for the idea of the window propagating box, but you will say I have improved upon it. I had a little table rather more than 3 feet long by 20 inches wide. I have taken off the top, made the drawer watertight with a vessel of tin, and had a top made of zinc, merely screwed down

to the sides and ends. Half a dozen small pots set in the drawer keep the top from bulging, and on that I have set two hand-lights, each 18 inches square, and I am sanguine of success." We like people to try their own plans, because they are more likely to bring their enthusiasm to bear upon them, so as to make them answer. If some readers are similarly situated we would say, Imitate our correspondent, and use your hand-lights. To those who have not hand-lights we would with equal frankness say, Do not think of buying them; and in the first place, supposing that the heating part and the mere frame-covering are to be in separate pieces, to lift off and on, the slightest reference to our advertising columns will show that the price of a hand-light would procure several frames of wood with one large square of glass as a covering. Then, again, much more heat will be required for a hand-light, as it will be losing heat freely all round; and though for some purposes there is the advantage of mere light, that is not a very great commendation when propagation by cuttings is considered, and is of no great consequence at first in the case of small seedlings. The wooden frame keeps in the heat transmitted by the hot water. In striking cuttings, damp and drip are also to be guarded against. Of late we have not done much with difficult kinds of propagation, but when we did we found the inconvenience of the flat-headed bell-glasses, useful though they were. The colder air outside caused the moisture to condense on the glass inside, and that, if left alone, would have dropped on the tiny cuttings. To prevent this the propagator had frequently to dry the inside of his bell-glasses by means of a cloth. To save that labour, or prevent failure from its neglect, we had glasses made, such as are now often met with, of a conical shape, terminating in a point in the knob or handle. Under these glasses the condensed moisture, instead of dropping, trickled down the sides of the glass and went into the sand or soil. Now this would partly take place from the somewhat conical moveable top of a common hand-light, but not thoroughly, as every bar and junction would be apt to retain the condensed vapour in the shape of dew drops inside. If these bars were at all rusty, the drops falling on the cuttings would be more unpleasant. Now, on the inside surface of our one large square of glass there would often be condensed moisture, just as there would be inside a hand-light; but whenever it appeared on the square of glass we would save all trouble in attempting to dry it by simply reversing it, and placing the dry side next the cuttings. In all such cases in frames out of doors, or cases in-doors, this condensation of vapour will be arrested by covering the glass, and thus preventing its cooling.

Whilst on the subject of hand-lights, we may state that for ourselves, even for out-door protection, we should prefer small wooden boxes with a top of one or two squares. It may be different with others where there is a tradesman for everything, but we have scarcely ever been able to show hand-lights as they ought to be. The glazing is no great matter when numbers of a similar size are to be done; but it is a long process when you have to chip out and mend as you can, and somehow points of shoes and boots, forks, spades, &c., seem to have an irresistible attraction for the sides of a hand-light. A wooden box would stand such touches with impunity. If there is some peculiar charm in the shape of a hand-light, then the wooden box may also be 18 or 24 inches square. Elegant boxes may thus be made, with ends sloping like the common garden frame. But to our hard-working amateurs, or cottage gardeners, who wish some simple contrivance by which they may obtain early vegetables, and propagate more easily many plants, we know of nothing more economical and useful than square wooden boxes, say of 14-inch deal, and from 7 to 9 inches in width, with a frame of one or two squares at the top, the first, of course, being the cheapest. Such boxes, for economy, might be nailed or pegged together as they come from the saw, be well tarred outside, and limewashed or coated with anti-corrosion paint inside, and would then last many years. Even if the glass top were placed level across, the water would find its way, and though no trouble had been taken to give a slope to the box, and it was square all round, the setting of one side 2 or 3 inches higher than the other would be sufficient to cause all damp and rains to pass off freely. As there seems to be a difficulty in obtaining those large, conical, rough-coloured glasses used in some market gardens, and so abundantly on the Continent, we do not know of any other contrivances more simple, more suitable, and more likely to meet the means of our pushing cottage gardeners, as almost everyone, having obtained the material, can make

them if contented with the useful rather than the ornamental. Even gardeners in large places have to resort to many makeshifts, or fall far behind in the race. In a great establishment, where everything appeared to the view as if there must be every convenience, we were astonished on being admitted to the working departments, to notice such a want of general requisites, and the constant strain thus occasioned to the mind of the manager, not to look at difficulties, but to devise some simple means for overcoming them.

Propagation in Beds of Fermenting Material.—We advert to this as thus coming in our way, and because it has occupied a portion of our time. We have lately said enough on the formation of such beds in a simple way, and with the smallest necessary amount of material. The great point is to secure sweetness, at least on the surface. Everything that has commenced growing will now strike all the faster from being placed in a hotbed slightly heated, or the reverse, according to the character of the plant. Thus what we said last week of the Fuchsia would apply to plants and cuttings generally; but here is a cutting of an Azalea taken from a plant kept cool all the winter. Such a cutting might be injured by placing it at once in a hotbed. It would be more likely to succeed if protected with a bell-glass, and gently excited for two weeks or so by a temperature just a few degrees higher, and being set in a hotbed when the base gave signs of swelling, it would then soon root. If, however, an Azalea has been forced to bloom early, and after blooming has been returned to a warm house to make its wood early, small shoots slipped off as we described for the Fuchsia, would soon strike if placed in a sweet bottom heat with a bell-glass over them. Pelargoniums, Verbenas, Calceolarias, Tropæolums, Pentstemons, and the great bulk of our bedding plants, if growing at all when the cuttings are taken, will now succeed admirably if set in a bed with bottom heat beneath them. They will be all the more robust if attention be paid to two points. First, After a few days give a little air at night and shut up closely during the day, especially if fine and bright. The close atmosphere then lessens transpiration from the cuttings. At night and in dull days there will be little demand on the cuttings in this respect. Secondly, If the cuttings will stand without shading, give none; and shading even in bright days will be little needed if the rays of light are somewhat diffused before reaching them. Cuttings at 12 and 15 inches from the glass will stand an exposure to sunlight that would shrivel them up at the distance of 6 inches. If in a bright sun a slight dewing from the syringe will keep the cuttings from flagging, prefer that to the shading; but shading should be given rather than let the cuttings be distressed. The difficulty as respects shading is removing it in time. Placing the cuttings a reasonable distance from the glass is a great security, and yet the direct, though more diffused, light prevents the drawing up or weakening of the cuttings.

These observations apply to striking cuttings in a rough way, so as to strike numbers with a minimum of labour. When despatch is an object, a warmer and closer atmosphere, as obtained by bell-glasses, or such propagating glasses as alluded to, must be used.

Rose Cuttings.—A correspondent wishes to know how to manage a lot to be taken from plants in the open air, and so as to form plants as soon as possible. We would thus advise: Take off the cuttings with a heel, as advised for Fuchsias, and at least 3 inches long if possible, though much smaller will do. Insert these in sandy soil, with sand on the surface, round the sides of the pots, and leave little more than a bud above the surface. Set these on the surface of a slight hotbed, and give air, especially at night, and keep close during the day. In from a fortnight to three weeks plunge the pots in the bed. Some cuttings might be struck sooner by placing them in heat at once, but a considerable number would most likely be lost. If the Rose plants have been forced, the cuttings might at once go into a mild bottom heat.

Such mild sweet hotbeds as we have referred to are just the places in which to put fresh-grafted Azaleas, Camellias, Oranges, Daphnes, Correas, &c. The simplest mode, for example side-grafting, is as good as any, but on these matters we cannot enter. Roses may be treated in the same way, especially if the stocks are established in pots, but they will not stand so much heat at first as Azaleas and Camellias.—I. F.

TRADE CATALOGUE RECEIVED.

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of New and Select Farm Seeds.*

COVENT GARDEN MARKET.—MARCH 3.

CONSIGNMENTS from abroad are again heavy this week, comprising Lettuces, Endive, Green Peas, Artichokes, new Potatoes from Malta and the West Indies. Oranges are, however, neither so good nor so plentiful as they were. Cornish Broccoli is very good, and the supply ample. Of old Potatoes there remains a heavy stock.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	1	6	2	0	Melons.....each	2	0	5	0
Apricots.....doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	2	0	8	0
Chestnuts.....bush.	10	0	13	0	Peaches.....doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	4	0	12	0
Black.....do	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries.....doz.	3	0	0	0
Grapes, Hothouse.....lb.	8	0	12	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	1	0	3	0
Beans, Kidney...hd.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	3
Broccoli.....bundle	1	0	2	0	Onions.....bushel	8	0	10	0
Brus. Sprouts $\frac{1}{2}$ sieve	3	0	8	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capiscums.....100	0	0	0	0	Peas.....quart	10	0	0	0
Carrots.....bunch	0	6	0	10	Potatoes.....bushel	4	6	0	0
Cauliflower.....doz.	1	6	4	0	Kidney.....do.	4	0	7	0
Celery.....bundle	1	0	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers.....each	1	0	2	0	Ranibarb bundle	0	6	1	0
Endive.....doz.	3	0	0	0	Sca-ble.....basket	2	0	3	0
Fennel.....bunch	0	8	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horse-radish.....bundle	3	0	5	0	Turkeys.....bunch	0	4	0	6

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*H. Oakey*).—We know of no book specially devoted to the culture of Beetroot for sugar-making. It does not differ from the culture of Mangold Wurtzel, except that the plants and rows may be closer. There is no modern work upon Hop culture. Every comprehensive work on agriculture treats on the subject. In the "Penny Cyclopædia" there are quite sufficient directions for the culture of the Beetroot and Hop.

STRAWBERRIES FOR A LIGHT SOIL (*G. H. Redhill, Surrey*).—The varieties likely to succeed on the soil you mention are Eclipse, La Constante, and Frogmore Late Pine. You may obviate the defects of your soil for Strawberry production by mulching thickly between the rows and between the plants.

STRAWBERRIES FOR MARKET (*R. & P. Blacksmith*).—For early produce Keens' Seedling, Sir J. Paxton, and Rivers's Eliza. For late produce Dr. Hogg and Frogmore Late Pine. Plant in rows a foot apart, and the same distance between the plants. After the first season remove every second row.

PRICE OF GRAPES (*P. L.*).—Like all other saleable productions they vary in price according to the season, supply, and demand. If you refer to our Covent Garden Market returns you will find there the retail prices weekly.

TOBACCO (*J. H. W.*).—There is no such species as *Nicotiana virginiana*. *N. virginica* was once the name by which *N. frutescens* was known, and if that is the plant you mean, its fumigating powers are very weak.

AUCUBA POLLEN (*A. Subscriber*).—Shake the pollen from the male flowers on to a piece of tissue paper; fold it up and keep it in a dry place until the female flowers are fully open, and then apply the pollen to their pistils with a camel's-hair pencil. You may put the fertilised plant out of doors immediately if the weather be dry and fine. The flowers of the Cherry Plum are not double, and it may be grown as a hardy standard.

COCO-NUT FIBRE (*S. B.*).—Baking it would certainly kill any mycelium of fungi which might be in the fibre. We doubt whether flowers of sulphur would be as effective.

PEAR-TREE BUDS BROWNED (*Centurion*).—We do not think that they are either grub or bird-injured, but merely the white opening portions are browned by night frosts and subsequent sudden exposure to sunshine. We cannot surmise about the *Ester Reurre*; if you send us some specimens of the fruit we will again examine them.

ROSE PRUNING (*D. T.*).—"I have pruned my Roses on the Manetti stock yet. They have full foliage and buds formed. I shall let all alone awhile,

and after danger of frost is over cut out what is damaged or useless, and leave the remainder. I expect a severe March. Briar-topped Roses should be pruned at once. There are three seasons when Manetti-stocked Roses may be pruned—as soon as the blooming season is over, in February or March, and after all danger from frost is over. I should let the Gloire de Dijon on a wall remain as it is, and in due time, when danger is over, cut out the weak shoots, shorten some of the branches a little, and leave on what is not injured by frost.—W. F. RANCIERRE."

CUT ROSES (*An Amateur*).—The only holders for carrying them in the hand that we know are the usual bouquet tubes. To send to a distance the flowers should be cut when about half expanded, and put into a box between layers of damp moss.

ROSES FROM EYES (*C. B.*).—Propagating Roses by eyes is but rarely resorted to, and is not practicable except where a good bottom heat can be had. The best time is immediately after the flowers are shed, and before the buds have started; select good eyes, and cut the shoot through immediately below the eye, and then about half an inch above it in a slanting direction upwards, and from the back of the shoot towards the eye. The other cut should be in the opposite direction. The leaf ought not to be removed, and the eyes should be inserted so as to be half an inch, and not more than three-quarters of an inch, in the soil, and with the leaf above it. The pots should be well drained and filled with a compost of light loam, sandy peat, and sand in equal proportions. The shoot-like portions should be placed erect, at about 1 inch apart round the sides of the pot. The eyes should be kept close, shaded, and moist, but not very wet. They will have rooted in about three weeks, and should then have air and be potted-off singly, kept close for a time until well established, then hardened off. You may strike cuttings out of doors under a hand-glass, putting them in at the end of September, or immediately after the plants have flowered in July.

PRUNING AND PLANTING TEA-SCENTED ROSES (*An Irish Subscriber*).—You do not say whether the plants are to be grown in pots or planted out. We presume the latter, in which case they should be kept in a frame until the beginning of April, and may then be planted out in rich rather light soil, enriched with leaf mould or well-rotted manure. They should not be very closely pruned; merely shorten the long shoots, and thin them out so as to remove those which are old and weak. If you wish for dwarf plants they may be more closely pruned, but leaving from four to six good eyes upon each shoot, so as to produce flowering shoots profusely. The plants should have a plentiful supply of water and liquid manure in dry weather, and a mulching of short littery manure. The long straggling shoots of the Duke of Edinburgh Rose we would cut back to three or four eyes each, the weak shoots to one or two eyes, and the very strong to six.

SCILLA SIBIRICA (*Tyro*).—It is the same as *S. præcox* and *S. amena* var. *sibirica*. There is a portrait of it and description in the "Botanical Magazine," t. 1025. The flowers are blue; it is four-leaved; scapes half-rounded, striated, two-flowered, decumbent after flowering.

ROCKWORK (*J. W.*).—We cannot improve on your proposal to stick shells, spar, lead ore, &c., into a cement covering the inside. You may thus make what design you please, but doing only a small piece at a time before the cement becomes firm.

CANKER—HARTLEY'S ROUGH PLATE GLASS (*A. Y. Z.*).—Canker in Apple trees is generally produced from the kind being too tender for the place, and making more vigorous wood than can be well ripened. The remedies are frequent transplanting, or keeping the roots so near the surface as to prevent rampant growth, and in the case of cankered parts, to clear out all the canker, fill up with a dough of clay and cow dung, and tie a rag or piece of cloth over it. In using Hartley's rough plate glass, we do not think it at all signifies which side goes outward; when fluted on one side we generally place that outside.

STAGE FOR A GREENHOUSE (*Hampshire Highlander*).—For a lean-to house nothing is better than a stage for plants that slopes with the roof. For large plants the shelves may be 1 foot wide, and from 12 to 15 inches apart. For small plants, and to hold a great many, the shelves may be from 7 to 9 inches in width, and from 6 to 8 inches apart in height. For a span-roof the stage may follow the roof, one central shelf, and three or four on each side. For a rather low roof we prefer a sparred table in the centre, a shelf all round, and a walk between the table and shelf. Thus, for a house 1½ feet wide, you could have a 1-foot shelf, two paths each of 2½ feet in breadth, and a table 4½ feet wide; or with one 3-foot path in the centre, you could have a platform on each side of 4 feet 3 inches in width. For merely showing-off plants, a good way, when there is a central path, is to have a stage on each side, the highest shelf at the side of the house, and the lowest 1 foot or so above the path. If in a lean-to climbers on the back wall are an object, the stage or table should not be high. You cannot grow plants and climbers on the same space. No plant in a pot should be nearer the back wall than from 2 to 3 feet.

CUCUMBER HOUSE (*Nil desperandum*).—Your plan for giving bottom heat to your Cucumbers is rather complicated, but if you obtain a temperature of from 75° to 80°, it will no doubt answer. We suspect the covering of the tank becomes hotter than that, and that the roots run too near it. If so, put some clinkers over it to keep the roots farther from it. The pipes rising from the tank should be furnished with plugs, so as not to admit much steam in dull damp weather, and more when it is dry and sunny. You may have had too much moisture. Lower the atmospheric temperature. Be satisfied with from 65° to 65° at night in the dark days, and a rise from 65° towards 70° in the middle of the day if rather dull, and from 65° to 10 more from sunshine. Do not think of anything like 80° for fire heat, especially in winter.

FLOWER GARDEN (*J. Boyd*).—According to the simple plan of planting, we prefer mode No. 1 to No. 2. We have looked over what you have said at page 213, last volume, and though we have no doubt that the four large beds of Roses, 8, 8, 8, 8, will look well, they will not be in character with the other beds in autumn. (*Leicester*).—Your plan of planting is simple and good, but the six spokes of your two wheels will be much of a similar shade, though relieved by two edging. We think this is rather an advantage when contrasted with the colours of the larger beds outside. (*Jerome*).—We do not see that the system of cross-planting can well be improved upon, except by substituting a grey or purple edging instead of the Mignonette.

TARLES ARROUNDED (*Repat*).—We hope you will be agreeably disappointed as to the trees. The oil and soft soap could penetrate only a short

way through the outer bark. If the bark seems much bite-bound, you might draw the point of a sharp knife in long shallow slits, doing little more than penetrating the outer bark—not going so deep as the wood. Some nice young trees had the stems painted with oil and tar, and we feared the result; but on making shallow longitudinal slits, the bark expanded on each side, giving free space for the new wood and bark, and though these protruberances were anything but ornamental for several years, the trees retain but little appearance of the manipulation now, and are quite healthy.

FRUIT TREES MOSBY (J. M. D.).—It is not too late to dust fruit trees and bushes with quicklime to free them from moss—indeed, it may be done at any season, except when the trees are in blossom. They should immediately before applying the lime be made quite wet by syringing, as the lime then adheres to the stems and shoots.

DAPHNE OREORUM (Jutta). We do not think manure water of any sort, and such as is given to other plants, would benefit this. It is much benefited, however, by a liactone soil, and especially by the peat overlying limestone.

LOMARIA OIEBA (C. C.).—It would succeed admirably on the stem of a *Dicksonia antarctica*, soil being placed in the centre of the stem, which should be hollowed out so as to receive it; or a small plant may be placed on the *Dicksonia*, and it will root down the stem, that being kept moist. The white *Kennedyia* is in almost every nurseryman's catalogue. We do not recognise the name of the plant by the leaf sent; flowers as well as foliage are necessary for identification.

ZYGOPETALUM MACKAYI CULTURE (Louise P.).—The plant, we should think, needs repotting and to be encouraged by a brisk heat and moist atmosphere, so as to make a good growth; this being secured, the growths ought to be well matured by keeping the plant drier and admitting air freely; but this ought not to take place until the pseudo-bulbs are full-sized and the growth complete. At no time should the plant be kept so dry as to cause the bulbs to shrivel. The cool *Orchids* generally require similar treatment, and those that are pot-bound ought to be repotted. You will find the contents of each number of *THE JOURNAL OF HORTICULTURE* on the last page but one.

FORCING WHITE LILACS (Idem).—The Lilac you see in the shops is the white Lilac, and it is brought into flower at this season by taking up plants that are well set with flower buds, and, after potting, forcing them in a hothouse. They flower in about six weeks. The temperature may range from 55° to 60° at night, and from 65° to 70° by day, with a rise from sun heat.

ONCIDIUM CRISPUM, TRICHOPILIA SUAVIS, AND CLOONEY CRISTATA TREATMENT (O. C. D.).—These are all what are known as cool *Orchids*, which succeed admirably in a house having a temperature of 45° in winter, and one of from 55° to 60° at night in summer, with a rise from sun heat to 85° or 90°. In winter they ought to be kept dry and cool, but the pseudo-bulbs should not be allowed to shrivel. If they are likely to do so, a gentle sprinkling overhead will keep them plump, but it must not be so frequently given, nor in such quantity as to excite growth, or cause the decay of the roots and bulbs. In summer, or after they begin to grow, the plants should have a plentiful supply of moisture, and the baskets be dipped in a vessel of water of the same temperature as that in which the plants are growing, so as to thoroughly moisten the material; and give water two or three times a week in addition to sprinkling overhead twice or thrice a day, maintaining a moist atmosphere by frequently sprinkling the walls, paths, &c. A moderate amount of air should be given, with shade from bright sun. When the growth is completed more air should be given and less shade, still continuing the moisture to secure the full feeding of the pseudo-bulbs, and when these are plump and fine gradually discontinue the watering and sprinkling, so as to cease altogether by the time dull weather sets in. Keep cool and dry during the winter.

MELONS (W. H. T.).—*Green-fleshed*: Beechwood, Heckfield Hybrid, Meredith's Hybrid Cashmere. *Scarlet-fleshed*: Scarlet Gem, Mounsdon's

Moreton Hall, and Queen Emma, flesh nearly white, all of good size and fine flavour. The handsomest Melon of all is Queen Anne's Pocket Melon, but its appearance is its only recommendation, and it is very small.

PROPAGATING AUCUBAS (C. S. H.).—You may put in cuttings of the ripe shoots now, and they will strike root freely; but if the shoots are young and suppy they ought not to be put in until they are firm at the base. This is best done in August. Grafting may be performed now, the earlier the better, or at the end of August or beginning of September, placing the plants in a cold frame, and keeping them close and shaded until the grafts have taken.

TOKAY FRONTIGNAN GRAPE (Idem).—It is doubtful whether this is not an old variety of Grapo newly named. Mr. Rivers describes it in his last fruit catalogue as having berries round, medium-sized, juicy, with a rich Muscat flavour; a great bearer, and early; cool viney or wall; and from what we knew of it, we think it identical with the White Frontignan, of which there are two sorts, the one very closely resembling Chasselas Muscat, and, like it, subject to crack; whilst the other is not so liable to crack, but is much given to shank, and comes in two or three weeks earlier. Both are very desirable Grapes.

EVERGREENS AND ROSES FOR SOUTH-WEST ASPECT (R. A.).—The Exmouth variety of *Magnolia grandiflora*, if the situation is warm, and *Eucallonia macrantha*. If the situation is exposed, *Cratogeomys pyramantha* and *Cotoneaster microphylla*. Roses: Climbing *Deveulensis* and *Gloire de Dijon*, both Tea-scented; or if you wish for one with more colour, Sir Joseph Paxton, of the Bourbon class, would probably suit you.

MELON FOR OUT-DOOR CULTURE (A. P.).—*Achapeasorticher* is the name given to a green-fleshed variety, which may be grown with the same treatment as is given to ridge Cucumbers. Its flavour is not bad, but we cannot recommend ridge Melons. There is also a red-fleshed variety, called the American Ridge Melon. Seed may be had through any seedsman advertising in our columns.

VARIOUS (F. I.).—You may grow the dwarf *Dahlias* in pots plunged in the open ground, using rich soil for potting, and pots 12 inches in diameter. The tubers ought to be placed in heat at once, so as to have them forward and well hardened off by planting-out time. Only one plant of Mrs. Pollock or of *Zonal Pelargoniums*, should be in a pot; 6-inch pots answer very well for the first, and 8-inch pots for the latter. The best blue *Lobelia* for bedding purposes is the Crystal Palace variety of *Lobelia erinus speciosa*.

CAMELLIA JACKSONI FLOWER-BUDS NOT EXPANDING (C. M. Major).—The probable cause is a defective root-action, just when the buds have reached the size at which they ought fully to expand. The buds were highly developed probably early in the season, and were then moved into a cooler place for blooming. If so the buds would be kept long in a dormant state from the check given to the supply of sap; this causes the outer petals to wither, and now that growth of wood and leaves has commenced, the supply is still defective. Do not hasten the *Camellia* so much next year, and when moved into a cooler place for blooming, take care that the roots are kept warm, and water with tepid water until the flowers have fully opened.

INSECT IN FERN CASE (K. M. A.).—We do not know of any red insect that infests Ferns. It will not be necessary to take the plants out and put them in fresh soil. We think if you were to fumigate the plants with tobacco smoke, filling the case with smoke, the insects would be destroyed or disappear.

GUEB IN TURF (N.).—Without seeing a specimen we cannot decide its name. Probably it is the larva of the Daddy-long-legs, *Tiphia oleracea*. A thorough soaking of the cricket grounds with lime and gas ammoniacal water will destroy them, and should be applied now.

NAMES OF PLANTS (M. Pegler).—We cannot name plants from their leaves only. (A. J. C.).—*Spartanum africanum*. (W. T. C.).—1, *Pteris emarginata*; 2, *Pteris leptophylla*. (Cantab.).—*Daphne laureola*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 2nd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 21	29.190	29.848	50	31	42	43	S.W.	.03	Overcast; densely overcast; heavy rain, brisk wind.
Thurs. 25	29.062	29.824	51	35	43	43	S.W.	.00	Fine, cold wind; overcast; boisterous and overcast.
Fri... 26	29.090	29.913	53	42	46	43	W.	.00	Fine, cloudy; densely overcast; clear and fine.
Sat... 27	29.012	29.951	53	37	48	41	N.W.	.00	Clear and very fine; cloudy; very fine and clear.
Sun... 28	29.773	29.675	46	37	45	44	N.W.	.12	Clear and fine; very fine; snow and hail; rain.
Mon... 1	29.872	29.340	51	36	45	44	N.	.12	Cloudy, but fine; stormy, heavy rain, boisterous.
Tues.. 2	29.874	29.184	50	27	45	44	N.W.	.08	Stormy and boisterous; very fine; rain; clear and fine.
Mean	29.910	29.677	50.57	34.57	45.00	43.57	—	0.41	

POULTRY, BEE, AND PIGEON CHERNOLE.

COLOUR OF THE AYLESBURY DUCK'S BILL.

I MUST demur to part of your reply, wherein you say, "I well-bred specimens it should not be a bright yellow, it should be a flesh colour, or a French white." Will you admit that Mrs. Seamon's or Mr. Fowler's are well bred? I think you must. I have had several from Mr. Fowler, and I maintain that the bills will lose the flesh colour, and become yellow in three months after leaving Aylesbury. There is no bog water in my place; through it is a running stream, and there are large ponds with clay banks, in which the Ducks thrust their

bills for food, and being thus in a state of nature, their bills possess the natural colour. It is said that the silicious soil of Aylesbury wears off the cuticle, and so renders the bills flesh-coloured. Be that as it may, it is evident they are acted on in some way so as to remove the cuticle.

I have several times won with Mr. Fowler's Ducklings. Two shows were held in Dublin about two years ago; at the first I won with Mr. Fowler's Ducklings when their bills were pinkish; at the second, about three months afterwards, I exhibited the same Ducklings. Mr. Jones, of Fulham, was Judge. He rejected them because their bills were too dark, although admitted the heaviest birds in the show. I complained to him, and his reply was so nearly like yours that I would almost fancy he wrote it. I told him then I would take care the bills

should be the proper colour in future, as the Judges would have it so. At the succeeding show Mr. Jones was Judge again, the same birds were exhibited and won, the bills being then the proper colour. If this be not a positive necessitating of deception I cannot understand what is; and I say the fault lies with the Judges. I see no reason why white Ducks with yellow bills should be rejected if finer than Aylesburies. I lately lost a drake larger and heavier than any I had from Mr. Fowler, and I believe there was no Aylesbury blood in him.

I hope to see this question discussed, as I consider it worse trimming than the removal of incorrect feathers.—E. PALMER WILLIAMS.

[You are quite entitled to entertain the opinion that an Aylesbury Duck's bill may be yellow as well as pinkish, and if you can induce poultry fanciers to agree with you, and to rescind the characteristic at present imperative, then you will not again have to confess that you condescended to act deceptively. That there was a necessity for your so doing no one will admit, except those who argue that to obtain an object unfair means are justifiable.—Eds.]

PROFIT OF POULTRY-KEEPING.

I, too, keep poultry for the pleasure of looking at them, for mine have no run, but depend upon the man to bring them every little change of food, as well as their daily meals—three per day. I had nine birds at the beginning of the year and thirty-six at the end. Their food was barley, ground oats, and a very few scraps from the house. Eggs laid, 845.

	£	s.	d.		£	s.	d.
9 Birds at 3s.	1	7	0	Value of eggs (667) ...	6	2	4
Eggs bought	0	12	3	Eggs sold	0	8	0
Keep for year	15	9	7	Chickens killed	14	8	0
Value of eggs set	1	9	8	Ditto sold	2	4	0
Profit	9	13	5	36 birds left	5	8	0
	£28	12	0		£23	12	0

The only advantage the feeding birds had over the others was a little more of the same food, and most of them weighed from 3½ to 4 lbs., but some were nearly 6 lbs. each, and not one was six months old. I could have made more profit had I been obliged to sell the produce instead of consuming my birds at home. The rate I have valued the birds and the eggs at I could readily have had. From eight hens now, this year I am having on an average forty eggs weekly.—A SUBSCRIBER ALSO.

BARROW POULTRY SHOW.

THE second annual Exhibition was held on the 26th and 27th inst. There were nearly 300 entries of Poultry, Pigeons, and Canaries. The following awards were made:—

GAME.—Cock.—Cup, C. W. Brierley, Middleton. 2 and *vhe*, J. H. Wilson. 3, W. Boyes, Beverley. *hc*, C. W. Brierley; J. Peele, St. Bees. *Chickens*.—1, J. Brough, Carlisle. 2 and *vhe*, J. Hodgson, Ulverston. 3, Graham & Robinson, Kendal. *hc*, J. H. Wilson. *c*, J. Peele. **GAME BANTAMS.**—Cock.—1, H. Nicholson, Holborn Hill, Cumberland. 2, J. Peele. 3, G. Noble, Staincliffe. *hc*, Bowman & Fearon, Whitehaven. **GAME (Selling Class).**—1, C. W. Brierley. 2, J. H. Wilson. 3, W. Boyes. *vhe*, E. Swainson. *hc*, C. W. Brierley; E. Swainson; J. H. Wilson. **SPANISH (Black).**—1, H. Beldon, Goitstock. 2, T. J. Harrison, Kendal. *vhe*, T. Robinson, Ulverston. *hc*, J. Newton, Silsden. *c*, T. Cliff. **DORKINGS.**—1, J. Whittam, Barrow. 2, J. H. Wilson. **GAME (Black-breasted or other Reds).**—Cup, C. W. Brierley. 2, Joseph Brough, Carlisle. 3, W. Boyes, Lancaster. *hc*, Graham & Robinson. **GAME (Duckwing, and other Greys and Blues).**—1, W. Boyes. 2, C. W. Brierley. *vhe*, W. J. Cope, Barmesby. *hc*, J. H. Wilson. **GAME (Any other variety).**—1, C. W. Brierley. 2, J. Brough. **COCHIN-CHINA (Cinnamon and Bun).**—1, J. Peele. 2, C. W. Brierley. *vhe*, J. H. Davies. **COCHIN-CHINA (Brown and Partridge).**—Cup and 2, T. Stretch, Ormskirk. *c*, E. A. Aglionby, Hawkshead. **COCHIN-CHINA (White).**—1 and *vhe*, R. Smalley, Lancaster. 2, F. Haworth, Haslingden. *hc*, T. Ashburner; Bowman & Fearon. **BRAMA POOTRA.**—1, E. Leech. 2, C. W. Brierley. *vhe*, C. Leyland. *hc*, E. A. Aglionby; E. Storey, Lancaster. *c*, J. Cowan. **HAMBRONS (Golden-pencilled).**—1, H. Beldon. 2, J. Walker, Knarborough. *vhe*, H. Pickles, jun., Earby. *hc*, T. Cliff, Horby; H. Beldon. **HAMBRONS (Silver-pencilled).**—Cup and *hc*, H. Beldon. 2, J. Smith, Ormskirk. **HAMBRONS (Golden-spangled).**—1, T. Dean, Keighley. 2, W. McMullen, Glossop. *hc*, H. Beldon. **HAMBRONS (Silver-spangled).**—1, H. Beldon. 2, T. Cliff. *hc*, H. Pickles, jun. **ANY OTHER VARIETY.**—1, H. Beldon. 2, J. Peele, Ulverston. *vhe*, J. Leyland, Warrington. *hc*, H. Beldon; J. Hird, Ulpha. **GAME BANTAMS.**—1, G. Noble. 2, G. Maples, jun., Wavertree. *vhe*, J. Peele. **BANTAMS (Any other variety).**—1, H. Pickles. 2, J. Peele. *vhe*, H. Yardley, Birmingham. *hc*, S. H. Stett, Rochdale. 3, J. Peele.

LOCAL CLASSES.

GAME (Black or Brown Red).—1, J. Peele. 2 and *c*, W. Boulton Park-

house. **Chickens.**—1, W. Myers, Ulverston. 2, J. Peele. *hc*, W. Boulton. *c*, E. Swainson. **GAME (Any other variety).**—1, J. Phillipsen, Barrow. 2, L. Cassen, Ulverston. *hc*, J. Peele. **GAME BANTAMS.**—1 and *hc*, W. Boulton. 2, A. Wadham, Farness Abbey. **TERREYS.**—1, J. Hunt, Barrow. 2 and *hc*, A. Woodhouse, Barrow. *vhe*, J. Whittam. **DUCKS (White Aylesbury).**—1, E. Leech. 2, Bowman & Fearon. **DUCKS (Golden).**—1, J. Whittam. 2, T. Robinson. *hc*, J. J. Walker. **ANY OTHER VARIETY.**—1 and 2, C. W. Brierley. *vhe*, S. & R. Ashton, Mettam. *hc*, A. Woodhouse, Barrow; T. C. Harrison; A. & J. Trickett, Waterfoot. **PIGEONS.** **CARRIERS.**—1, J. Preston, Lancaster. 2, J. & W. Towerson, Egremont. *hc*, W. Pickard, Ulverston; W. Jackson, Bolton-le-Sands. **POUTERS.**—1, H. Yardley. 2, J. & W. Towerson. **TUMBLERS.**—1, H. Yardley. 2, T. Ashburner. *hc*, F. Graham, Birkenhead. **JACOBS.**—1, S. Sherwen, Whitehaven. 2 and *hc*, J. & W. Towerson. **PARS.**—1, W. Jackson. 2, H. Yardley. *hc*, W. Boulton. **TOURNAIS.**—1 and *hc*, F. Graham. 2, J. & W. Towerson. **OWLS.**—1 and *hc*, F. Graham. 2, J. & W. Towerson. **FANTAILS.**—1, H. Yardley. 2, F. Graham. *hc*, W. H. Ormandy. **DRACONS.**—1, H. Yardley. 2, F. Graham. *c*, H. Alton, Birmingham. **ANY OTHER VARIETY.**—1, F. Graham. 2 and *hc*, H. Yardley.

CANARIES.—Belgian (Yellow).—1 and *c*, J. Hunt, Barrow. 2, J. Paxton, Ulverston. *hc*, J. Boulton. **Belgian (Buff).**—1 and 2, J. Hunt. *hc*, J. Paxton. *c*, J. Boulton. **Mules.**—1, Mrs. B. Minniken, Ulverston. 2, J. N. Hartson, Barrow. *hc*, G. Conius, Barrow. **Pitchers.**—1, J. Boulton. 2, J. Paxton. **Lizard (Gold and Silver-spangled).**—1, T. Cockerton, Ulverston. 2, J. Moffatt, Ulverston. **Common (Yellow).**—1, J. Moffatt. 2, W. Ormandy, Barrow. **GOLDFINCH.**—1, 2, and *vhe*, J. Hill, Barrow.

JUNGES.—Poultry: Mr. R. Teebay, Fulwood, Preston. **Pigeons:** Mr. J. Barrow, Pendleton; and **Canaries:** Mr. A. Benson, Barrow.

KINGS' LYNN POULTRY SHOW.

ALTHOUGH a first meeting it has rarely been our lot to attend one so well conducted, and in a building so well calculated for the purpose of a show, or with poultry of a higher class competing. The Show proved, as it deserved to be, a complete success, and the attendance of visitors was beyond expectation. The light was excellent, and the pens were the well-known ones of Messrs. Turner, of Sheffield. With so early a spring it is quite late enough for any poultry exhibition, and many fine pens of birds that are now quite overgrown were so completely ruined in constitution, that we fear their produce of the coming season will be of but little value.

Of **Dorkings**, many a first-class pen was brought for competition, but so completely overdone that one cock actually died on the spot, and two or three others were evidently beyond the possibility of recovery. The prize pens were in excellent condition and feather. Among **Cochins**, Buffs were the best colour shown, Partridge being also good, but Whites were so indifferent that we scarcely ever saw any so faulty. Of **Brahmas**, the Dark-feathered were far better than the Light ones. **Spanish** were good, but coarse faces were too general. In **Hamburghs** many cases of decided rump were noticeable, but a considerable number of the birds shown were good. **French** fowls were excellent, as were most of the **Game**. The **Game Bantams**, as a class, were far from of condition, with the exception of a very few pens. **Geese** were as good as they well could be, and of **Turkeys** we do not remember a better display. Of **Aylesbury Ducks** not a few were so much overfed, as to be quite useless for breeding purposes; and among the **Ducks** of Any other variety, **Carolinians**, **Mandarins**, **Pintails**, and extraordinarily fine **Buenos Ayres** Ducks were exhibited.

The **Pigeon** classes were a show in themselves, the **Carriers**, the **Pouters**, the **Almonds** and **Barbs**, being among the best of the classes. It is quite time Pigeon shows were over for this season, as numbers of eggs (of course destroyed) were laid in the pens.

The weather was very favourable, the Committee were very attentive to their duties, and everything passed off well.

DORKINGS (Coloured).—Cup, Mrs. Brackenbury. 2, J. Frost. *hc*, W. Bloomfield. *c*, D. C. Campbell, Brentwood; M. Semmens, Aylesbury; J. Martin. *c*, G. Bambridge; J. Frost; Rev. T. L. Fellows; W. Hays; H. Lingwood.

DORKINGS (Any other variety).—1, H. Lingwood. 2, W. Woodhouse. **COCHIN-CHINAS (Cinnamon and Buff).**—Cup, H. Lingwood. 2, Mrs. Borrell. *hc*, Rev. C. Gilbert; J. H. Dawes; H. Lingwood. *c*, Mrs. Brackenbury; Mrs. Mills.

COCHIN-CHINAS (White).—1, Withheld. 2, Mrs. Allen. **COCHIN-CHINAS (Any other colours).**—1, J. R. Rodbard. 2, J. K. Fowler; *hc*, J. Stephens. *c*, T. M. Dairly; W. Hays.

BRAHMAS (Dark).—1 and 2, Mrs. Burrell. **BRAHMAS (Light).**—1, L. H. Kicketts. 2, H. Dowsett.

SPANISH.—1, T. C. & E. Newbitt. 2, W. Hays. *hc*, J. Laming; P. H. Jones, Fulham. *c*, A. S. Rae; G. S. Hall; Mrs. Brackenbury.

HAMBRONS (Gold and Silver-pencilled).—1, W. K. Tickers. 2, H. Pickles, jun. *c*, W. K. Tickers; C. Havers, Lugatstone; J. Plant.

HAMBRONS (Gold and Silver-spangled).—Cup, W. B. Barnard. 2, Mrs. Burrell. *hc*, J. Laming; J. Barnes; W. Adams; T. Walker, jun.; J. Plant; T. C. & E. Newbitt. *c*, J. R. Jessop, Hull.

GAME (Black-breasted or other Reds).—1, L. Biney, Manchester. 2, S. Matthew. *hc*, W. Boyce. 3, B. Biney; S. Matthew, Stowmarket. *c*, S. Matthew; H. E. Martin; R. Hall, Cambridge.

GAME (Any other variety).—Cup, W. Boyce. 2, J. Laming. *hc*, S. Matthew. *c*, H. E. Martin.

FRENCH FOWLS (Any variety).—1, Col. Stuart Wortley. 2, W. G. Quibell. *hc*, L. Biney; J. K. Fowler; W. Hawe. *c*, Mrs. Burrell.

GAME BANTAMS (Black-breasted Reds).—Cup, and 2, W. B. Jeffries, Ipswich. *hc*, W. Hawe. *c*, A. Stonar; J. Laming; Rev. C. H. Crosse, Cambridge; L. Biney.

GAME BANTAMS (Any other variety).—1 and 2, L. Biney. *c*, E. Sheerman, Chelmsford.

BANTAMS (Any variety except Gamol).—1, H. M. Maynard. 2, S. H. Stott. *hc*, J. H. Davies; T. C. Harrison, Hull; Master J. Hurn; A. Woodcock; G. Clarke; T. Walker, jun.; S. S. Mossop; J. Laming; W. B. Jeffries; L. Biney; T. Brackenbury; Rev. E. Tearle.

ANY OTHER VARIETY.—1, J. Laming. *hc*, T. Spurr; L. Biney. *c*, S. S. Mossop; W. K. Patrick; J. W. King; A. S. Rae; J. T. Ashley.

SELLING CLASS.—1, P. W. Story. 2, Mrs. Burrell. *hc*, C. W. Gibbs; Rev. F. Tearle; K. Mackley. *c*, W. N. Hunt.

TURKEYS.—Cock.—1, J. B. Hidea. 2, R. Cater. *hc*, W. Wright; G. S. Hall; J. T. Ashley; Mrs. Brackenbury; T. M. Derry. *Hens*.—1, Mrs. Brackenbury. 2, W. Wright. *hc*, D. Ward.

DUCKS (Aylesbury).—1, J. T. Ashley. 2, Mrs. Burrell. *hc*, Mrs. M. Seamons; H. J. Coldham; J. K. Fowler, Aylesbury.

DUCKS (Rouen).—1, J. K. Fowler. 2, H. Payne. *hc*, A. S. Rae.

DUCKS (Any other variety).—1, J. T. Ashley. 2, J. K. Fowler. *hc*, S. Barn. *hc*, T. C. Harrison; Mrs. Allen. *c*, Mrs. Allen.

GESESE.—1, J. K. Fowler. 2, Mrs. Brackenbury. *hc*, W. Looker; J. T. Ashley.

PIGEONS.

CARRIERS.—1 and 2, R. Fulton, Deptford. *hc*, H. Yardley; A. Stonar; R. Fulton; F. J. Leach, Rochdale.

POUTERS.—1, J. Hawley. 2, P. H. Jones. *hc*, R. Fulton; P. H. Jones. *c*, R. Fulton; F. J. Leach.

TUMBLERS (Almond).—1 and 2, R. Fulton. *hc*, J. Fielding, jun.; T. C. & E. Newbitt. *c*, R. Fulton.

TUMBLERS (Any other variety).—1, R. Fulton. 2, J. Fielding, jun. *hc*, H. Yardley; R. Fulton. *c*, J. Hawley.

BALDS OR BARDS.—1, J. Fielding, jun. 2, R. Fulton.

NUNA.—1, P. H. Jones. 2, F. J. Leach.

MAOPIES.—1, T. C. Marshall. 2, T. C. & E. Newbitt. *hc*, F. J. Leach.

TUBBERS.—1, J. Fielding, jun. 2, P. H. Jones. *hc*, H. Sunshall; F. J. Leach. *c*, Mrs. Woodhouse.

OWLS.—1, J. Fielding, jun. 2, P. H. Jones. *hc*, J. H. Ivimey; H. Green.

BARBS.—1, J. H. Ivimey. 2, H. M. Maynard. *hc*, R. Fulton; P. H. Jones. *c*, G. Morling; J. Fielding, jun.

TRUMPETERS.—1, J. Hawley. 2, E. Sheerman.

JACOBIANS.—1, H. M. Maynard. 2, R. Fulton. *hc*, J. Hawley; R. Fulton; P. H. Jones. *c*, R. Fulton; T. C. & E. Newbitt.

FANTAILS.—1 and 2, T. C. & E. Newbitt. *c*, W. H. Tomlinson; J. Hawley.

RUNTS.—1, J. T. Ashley. 2, H. Yardley.

ANY OTHER VARIETY.—1, P. H. Jones. 2, J. Hawley.

SONG BIRDS.

CANARIES.—*Norwich* (Yellow).—1, R. Mackley. 2, H. Thurlow. *c*, T. Watson; G. Smith. *Belgian*.—1, R. Mackley. 2, Withheld. *Lizard* (Green).—1, H. Green. 2, J. Thompson. *Lizard* (Grey).—1 and 2, H. Green.

CINNAMON.—1, H. Green. *Mottled*.—1, R. Mackley. 2, H. Green.

ORANGE.—1, H. Thurlow. *Mealy*.—1, H. Thurlow. *Buff*.—1, H. Thurlow.

GOLDFINCH MULE.—1, H. Thurlow. 2, R. Mackley. *hc*, R. Mackley. *c*, E. S. Smith.

LINNET MULE (Brown).—1, H. Green. *c*, J. Gawan.

PARROT (Green).—1, G. Helsham. 2, H. R. Gamble. *c*, T. Schweip.

PARROT (Grey).—1, J. J. Lowe. 2, T. E. Hutton. *c*, G. Street.

PARAKEETS.—1, W. Sharred. 2, C. Regester.

LOVE BIRDS.—1, J. Franklin.

RABBITS.—*Longest-eared* (Pure breed).—1, G. Jones. 2, A. H. Easton. *hc*, J. A. Nurse. *Heaviest*.—1, J. Dixon. 2, W. Besty. *Any other variety*.—1, A. H. Easton. 2, J. H. Chadwick. *hc*, J. Black. *hc*, A. J. Exley.

The Rev. Lyon Fellows, and Messrs. Hewitt and Tegetmeier were the Judges.

KENT AND SURREY POULTRY SHOW.

This took place at Peckham, on the 2nd and 3rd inst. We must defer further details till next week.

DORKINGS.—1, J. Ivery & Son, Dorking. 2, L. Patten, Hillmore, Tannaton. 3, S. Harris, Motingham. *hc*, Lieut.-Col. H. B. Lane, Bracknell; M. Leno, Dunstable; J. Frost, Parham. *c*, C. Priest, Worthing; F. Parlett, Great Baddow.

GAME.—1 and 3, S. Matthew, Stowmarket. 2, P. H. Jones, Fulham. *hc*, Rev. G. S. Cruwys, Craws Moorhead; R. Hall, Cambridge; S. Matthew, Stowmarket. *c*, F. Pittis, jun., Newport, Isle of Wight; Rev. F. Watson, Kildvedon; Rev. G. S. Cruwys.

SPANISH.—1, F. Nichols, Camberwell. 2, E. Corke, Maidstone. 3, J. Stephens, Walsall. *hc*, H. A. Silverster, Gravesend; P. H. Jones. *c*, P. H. Jones.

BRAMHA (Dark).—1 and 2, Lieut.-Col. H. B. Lane. 3, C. Priest. *hc*, L. Wright, Kingsdown, Bristol. *hc*, C. Priest; Rev. J. Ellis, Bracknell. *c*, F. Pittis, jun.; H. J. Cuff; J. Box, Camberwell Road; H. Dewsett, Pleshey.

BRAMHA (Light).—Cup and 3, H. Dewsett. 2, J. Pares, Postford, Guildford. *hc*, A. O. Worthington, Burton-on-Trent; J. Pares; F. Crook, Forest Hill. *c*, J. Pares; F. Crook.

COCHINS.—1, G. Shrimpton, Leighton Buzzard. 2, T. W. Rust, Hastings. 3, J. K. Fowler, Aylesbury. *hc*, G. Shrimpton; W. F. Checkley, Moulton; J. H. Dawes, Birmingham; Mrs. Christie, Glydebourne, Lewes. *c*, H. J. Dwelly, Peckham.

HAMBURGERS.—Cup, P. H. Jones. 2 and 3, F. Pittis, jun. *hc*, W. Adams, Ipswich. *c*, W. K. Tiekner, Ipswich.

BANTAMS.—1, W. Adams. 2, M. Leno. 3, H. M. Maynard, Ryde. *hc*, W. S. Forrest, Greenhithe. *hc*, M. Leno; J. Parlett; S. A. Wyllie, East Meusey; Rev. G. S. Cruwys; Miss Esquilant, Brixton; P. H. Jones. *c*, F. Pittis, jun.; Rev. E. S. Tiddeoan, Brentwood; T. W. Anns, Clapham; W. Boucher, Notting Hill; J. H. Dawes; W. Barford, Aylesbury.

FRENCH.—1, J. K. Fowler. 2 and 3, P. H. Jones. *hc*, W. Barford; Quibell, Newmarket; W. Dring, Faversham. *c*, H. S. Fraser, Headley.

SELLING CLASS.—1, P. H. Jones (Silver Polands). 2, W. Toby, West

Brompton, 3, G. Shrimpton (Black Red Game Bantams). *hc*, H. Dewsett, (Dark Brahmas); F. Crook (Light Brahmas); Rev. F. T. Scott, Shepherds-well Vicarage, Dover (Spanish); P. H. Jones (Spanish); W. Adams (Black Bantams); P. W. Story, Darenty (Bantams); H. Saville (Japanese Silkies). *c*, T. W. Anns (Dark Brahmas); W. B. Kiches (Dark Brahmas); F. Crook (Light Brahmas); Mrs. Christie (Partridge Cochins); C. Howard (Spanish); W. Dring (Creve-Coeur); P. H. Jones (Golden Polands).

CUP FOR GREATEST NUMBER OF PRIZES.—P. H. Jones.

JUDGES.—Mr. E. Hewitt, and Mr. Tegetmeier.

TESTIMONIAL TO MR. DEAN WOLSTENHOLME.

As noticed in our impression of last week, the presentation of this testimonial took place on the evening of the 23rd ult., in the room occupied by the National Peristeric Society, Freemasons' Tavern, London. The meeting was well attended, and composed mostly of the members of this Society. England was thus strongly represented. Scotland was represented by Mr. Hnie. Several of the gentlemen brought with them specimens of Pigeons, including Pouters, Carriers, Short-faced Tumblers, Jacobins, &c., and these birds were placed in pens which stood on tables close to the walls of the room.

In the midst of this Exhibition of Pigeons a supper-table was spread and amply loaded; and at 8.30 p.m. F. Esquilant, Esq., took the chair, Mr. Wolstenholme being seated on his right hand. After an excellent supper and the usual loyal toasts the Chairman proposed "the toast of the evening," the health of Mr. Wolstenholme, which was responded to with great heartiness. In the course of the Chairman's remarks, he entered at length upon the upright and honourable character which Mr. Wolstenholme had all along borne, the kindness and gentleness of his disposition, the good word towards him which was in the mouth of everyone with whom he was acquainted, his ability as a judge of Pigeons, and the lasting obligation which fanciers owe to him (Mr. Wolstenholme), for the beautiful engravings of fancy Pigeons which he has produced—many of them portraying the standard points with a fullness and truthfulness which language cannot convey—and the fact of some of those portraits having been the means of inducing many to enter upon the Pigeon fancy. The Chairman then addressing Mr. Wolstenholme presented him with a purse containing fifty sovereigns, as a national testimonial, and a proof of the high esteem in which he is held by Pigeon fanciers.

Mr. Wolstenholme, much overcome, returned thanks in a modest and becoming reply.

It is pleasing to think that the old fancier who has been so much respected, and who has done so much for the "fancy," has had his services publicly acknowledged. The testimonial has been subscribed to by the leading Pigeon fanciers of Great Britain and Ireland.

FOUL BROOD—PARTHENOGENESIS.

From the hint thrown out at page 373 of the last volume of "our Journal" by my friend the "DEVONSHIRE BEE-KEEPER," whose authority is so much respected, it may be supposed that many or all of my hives are tainted with foul brood, but so far as I am aware there is not one of my stocks in this unfortunate condition. At the present moment I have a dozen in perfect health, and so populous as to make them appear far more like summer than winter hives. In addition to these I have several other hives devoted to experimental purposes. My apiary could not have been more prosperous than it was during the whole of last summer. Indeed I had more bees than I could make use of, and was glad to give the supernumeraries to any friends who would accept of them. When I made my autumnal examination, I was quite satisfied, and an inspection, made Feb. 19th, confirmed the good opinion I had previously formed.

In regard to one of my stocks, I may state that it is now nearly five years old, some of its combs having come from Devonshire in May, 1864. During the summer of 1865 it was situated within 4 yards of a foul-breeding hive, whose downward progress I was watching almost daily. Singularly enough, this stock escaped infection, notwithstanding its contiguity to a hive virulently affected by disease. In 1866 it threw two large swarms. In 1867 it gave me a large super of honey, when it was left without sufficient food to carry it through the following season; for on the 11th of April, 1868, when taking a walk round my apiary, I found the bees apparently lifeless, the entrance being choked up with dead bees. Not having elevated the frames during the previous summer I concluded death might have been occasioned by some other cause than hunger; but I found on inspection that every vestige of food had disappeared, and that there were neither eggs nor brood in any of the cells.

The bees lay in heaps on the floorboard, and hung in motionless clusters between the frames. Fancying that some bees on the centre comb slightly vibrated their wings, I carried the hive into a warm room, and brushed all the bees adhering to the combs and lying on the floorboard into apparently one lifeless mass. A careful examination of each comb failed to detect the slightest trace of disease. I next warmed a little thin syrup, and poured it on the heap, mixing the whole with a spatula, and afterwards placed it before the window through which a bright sun happened to be shining. The hot rays, combined with the heat of the room, revived the mass, which seemed at first sight beyond recovery. As animation returned, the bees licked the syrup off each other, and in the course of a few hours I was able to return them to their dwelling with comparatively few deaths. By judicious feeding the stock prospered, and on the 7th and 16th of July was able to throw off two large swarms. While I write, it is one of my best stocks, having brood in all stages, and the bees may be seen busily carrying in pollen on every favourable day. As I said, some of its combs have been constantly in use since May, 1864; and for aught I know to the contrary they may have done service in Devonshire for years previous to their coming into my possession. Judging from the experience I have had, I would say that a hive afflicted with foul brood may survive two summers, but will never see the third.

Although the circumstances under which disease is developed are tolerably well known, I believe its causation is as yet very little understood. The origin *de novo* of any epidemic has not yet been decided upon. Whilst I quite believe what Mr. Woodbury has stated, regarding the cases of chilled brood that came under his notice, I am not sure that they can be regarded as settling the point in dispute. In the summer, when food is abundant, or when feeding is resorted to, I think that chilled brood even when becoming putrid will ere long be removed by a good swarm. The great heat that then pervades the hive soon gives such consistency to decaying material in a semi-liquid state, as enables it without much difficulty to be removed by the bees. In this way the putrescent substance may not have had time to generate the poison of disease—atmospheric influences at that season may not have been favourable. The combs referred to by me as having contained healthy hives were inserted in October, and no unusual activity was created by feeding.

Before concluding these remarks, I may mention that every doubt in my mind as to the truth of the doctrine of parthenogenesis has been removed. Having lately met with drone-breeding queens, I began to think some stimulus might be required in egg-laying, but on the 26th of October last, when not a drone existed in the neighbourhood, I had a young queen hatched. She was never seen to leave the hive, and, indeed, the weather in November was such as to preclude the possibility of a wedding flight. I am satisfied in regard to the perpetual virginity of this queen, yet she began to lay eggs in January, and on the 17th of February young drones were running actively over the combs. The drones are all being reared in worker cells.—R. S.

I am very glad to learn that the spairy of my esteemed correspondent is now in such perfect health, and have no disposition whatever to discredit the evidence which he has produced in support of his theory regarding the origin of foul brood further than that, as he himself stated at the time, it was still possible that he had been making use of previously-infected combs; and being also aware that his spairy had not always been free from this fatal scourge, I was and am afraid that his experiments can scarcely be admitted as decisive on the point. Although the fact that not one of the many cases of chilled healthy brood which have come under my notice has ever developed into foul brood, proves to demonstration the fallacy of Mr. Lowe's assertions, I am not unmindful of the difficulty, nay, almost the impossibility, of proving a negative, and am, therefore, far from holding it to be conclusive on the debatable point whether healthy chilled brood may not under very exceptional circumstances degenerate into actual foul brood. All I can say is, that no such case has ever come under my own observation. My valued friend most truly remarks that the origin *de novo* of no epidemic has as yet been decided upon. It is very probable that medical men may entertain abstract theories as to the first causes of smallpox, measles, scarlet fever, rinderpest, &c., who yet if a case of either of these diseases were actually brought before them, would under any circumstances absolutely refuse to refer it to any cause other than infection or contagion. And this, in the absence of more decisive evidence than has yet been produced, is still my opinion with regard to foul brood.

It is also extremely gratifying to me to find that "R. S." has at length succeeded in obtaining such conclusive evidence as entirely to dispel from his mind the last lingering doubt with regard to the truth of parthenogenesis, which may well be deemed one of the greatest marvels, if not the very greatest marvel, which has yet been discovered in insect life.—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

CHARACTERISTICS OF GAME FOWLS (*Novice and New Subscriber*).—There are four colours admissible for the legs of Game fowls—willow, blue, yellow, and white. All have their partisans; the willow are the most popular. You are hardly explicit enough when you speak of Grey Game. Are they Birchen Greys? We have seen them with black legs. No Game fowls can be disqualified for the colour of the legs, provided all in the pen are alike. There are, nevertheless, preferences and prejudices that go for much. White in the ear-lobe is objectionable. A white tail feather is only admitted in White or Pile cocks. In the dark classes it is a disqualification.

FOWLS FOR CONFINED SPACE (*Hampton Wick*).—Presuming, from your mention of a small aviary, that your fowls are to live in confinement, we cannot advise Derkings. They require a range. Cochins or Brahmas will do; we prefer the latter. Either will lay well in a small space, but chickens want elbow-room. A small space will not do for rearing chickens. Any place will do for a hen to sit in, and where nothing else offers we advise you to buy as many empty butter-firkins as you will require, have them sawn across in half, and the head knocked out, place them on the ground, put in a little straw on which to put the eggs, and set the hen. The top may be covered with anything. Nothing is better than a basket-lid. A lying-box is different. All that is required is to put a board 1 inch from the ground, and 12 inches from the wall. This may be 3 or 4 feet long, according to the number of birds or the size of the house, divided at intervals of 10 inches by pieces of thin deal board, which can be fastened to the wall. If a little straw is put in these places the hens will lay in them. In the summer one cock will serve twelve hens. You run little risk now, as they become more attentive as the weather becomes warmer. When your chickens are hatched we advise you to put them in the kitchen garden; they will do well and find food in the sheltered spots, and they will do no real harm.

FOOD FOR FOWLS (—).—We have many times written that it is impossible for us to say how much corn a fowl, Duck, or Pigeon will eat or should eat. A pint and a half should satisfy any fowl, but a fowl fed on clean corn only would soon die. Fowls require grit as a means of digestion, grass as a help to health, insect food for the same purpose, and they feed and eat a hundred things we neither see nor know. Without these helps life is almost, and health is quite, impossible.

FOWLS OVERFED (*J. P.*).—Abernethy told a gouty patient the best cure for the disorder was to live on 2s. a day, and earn it. We think so badly of your dietary that we are sure your birds are suffering neither from fat nor plethora. We are surprised they lay well, but do not wonder the eggs are not good. Our fowls do not care for whole oats. Grind your oats and give them slaked with water. Serve some good heavy barley in the same way. Feed alternately with each, and by way of change sometimes give a little whole maize. If they have no grass run, give them daily some growing sods, cut with plenty of fresh mould on them. You will find their health improve, and your eggs will have nothing objectionable either in taste or colour. They are not unwholesome.

SPANISH AND MINORCA FOWLS (*F. A. B.*).—The only essential difference is, that the Spanish must have white faces and earlobes, and the Minorcas red faces. To breed Spanish you must purchase a cock and hens having the essential characteristics.

READING AYLESBURY DUCKLINGS (*J. N. C. P.*).—The ducklings must be kept out of the water, and out of positive cold, but they want no other shelter than that afforded by an outhouse that is free from draughts. An old pigsty is a good place later in the season, but now we recommend you a more sheltered place than that is usually. Let the young have a shallow vessel with very little water in it, and some oatmeal, with scraps of bread in it. When they get older put sods of grass in it. There is no great difference in the eggs, save that those of the Aylesburies are very large. The shape has nothing to do with them, unless a very old theory be a true one—viz., round eggs are Ducks, and long ones drakes.

RAIN WATER FOR POULTRY—BLACK HAMBOURS (*W. C.*).—Rain water is said to be bad for fowls, but we do not know why, for it is pure if not caught from the roof of a house in a smoky district. Filtered and exposed to the air for some days it would even be rendered harmless. If you get three good birds for the sum you name, they are worth it. If they are bad ones, the sum asked is too large.

POULTRY-YARD ARRANGEMENTS (*J. G.*).—We can now add that you may start with eighteen or twenty-four fowls, as you inform us they will have the run of a plantation. They should be birds of 1688. You must trust these of whom you buy them. Anyone can tell the difference between a pullet and an old hen, but it would be impossible to give marks, signs, or data to guide anyone in hazarding a guess at the age of a bird between twelve and twenty months.

PORTSMOUTH POULTRY SHOW (*H. S. F.*).—We are much obliged by your notes, and if, on a future occasion, you will favour us with your comments during the week a show is held, we will readily publish them.

CHURN (*Clifton Cottage*).—Try the American churn, sold at the depot in Bond Street. You can have it of any size.

MITES IN STORED COMBS (*E. J. C.*).—We have often used similar combs and never found that the mites (*Acari*), with which they were infested produced any injurious effects on the bees.

MANOE (*Star*).—There is no doubt that your pointer is suffering from one of the many varied forms which mange assumes. The hair often only at first falls off on the dog's joints. Lower his diet, give him no meat, and little meal, but plenty of mashed potatoes and boiled greens. Give him four grains of blue pill every morning, and a dose of castor oil afterwards. Wash the dog once or twice weekly with soft-soap and water.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 11—17, 1869.	Average Temperature, near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.		
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.					
11	TH	Meeting of Royal & Zoological Societies, 18.30 P.M.	49.0	32.1	40.6	18	26	47	55	47	57	47	5	21	6	28	10	8	70
12	F		50.3	31.9	41.1	20	24	6	57	5	21	6	3	5	29	9	51	71	
13	S	Royal Horticultural Society, First Spring Show.	50.3	33.7	42.0	15	21	6	59	5	11	6	8	6	1	9	25	72	
14	SUN	5 SUNDAY IN LENT. (S. ow.)	50.7	34.6	42.5	19	18	6	0	6	5	7	11	7	1	9	18	73	
15	M	Meeting of Entomological Society, 7 P.M.	50.5	33.7	42.0	21	18	6	2	6	25	7	17	8	2	9	1	74	
16	TU	Royal Horticultural Society, Fruit, Floral, and General Meeting, & Royal Botanic Society's First Spring Show.	51.0	34.0	42.5	14	13	6	4	6	4	7	21	9	3	8	44	75	
17	W		52.0	32.5	42.3	13	11	6	6	6	10	8	23	10	4	3	25	76	

From observations taken near London during the last forty-two years, the average day temperature of the week is 51.5°; and its night temperature 33.2°. The greatest heat was 67°, on the 12th, 1811; and 15th, 1828; and the lowest cold 17°, on the 17th, 1845. The greatest fall of rain was 0.70 inch.

THE LARGE PORTUGAL ONION.



I have received the following communication from Messrs. Barr & Sugden, to whom it was addressed:—

I have great pleasure in complying with your request to send you a small quantity of the seed of the large variety of Onion exported from this place and from some parts of Spain.

The variety is not, in my opinion, a permanent one. Its great size and mild flavour depend upon the conditions of soil, climate, and cultivation, and in unfavourable seasons, or with careless cultivation, the plant perceptibly degenerates, even in this country.

It is usual to sow at about the season of the autumnal rains in well-manured seed beds. These beds are, if necessary, well watered in dry weather during the winter, and the young plants, not subjected to any check from continued frosts—for it is a rare circumstance for a hoar frost to remain on the ground after eight o'clock in the day—enjoy a continuous growth till the spring. In March or April the young plants are taken up, being then 6 or 8 inches in length from bulb to top, and are planted at intervals of 15 inches in furrows made by the plough or the hoe, and filled to the depth of 2 or 4 inches with fresh manure. I observe that the young plant is placed with its roots in actual contact with the manure, which is either cow dung, or a mixture of cow dung and night soil, or a not-very-well-decomposed compost of night soil and earth, weeds, &c. A most essential condition of the successful cultivation of these Onions is water—that is, water irrigation; and the abundant and timely watering of the plants requires great and constant attention.

The formation in this neighbourhood is granitic, and the soil is light and very friable. The Onion is said to thrive in the same ground year after year.

These are, so far as my observation goes, the chief conditions of the successful growth of the Portugal Onion. In England you can, no doubt, find as good, or better, soil, and you probably would not require the water; but what I fear you could not get, except artificially, would be the long unchecked growth of the plant for eleven or twelve months. To this, chiefly, I believe, the bulb owes its size and flavour.—OSWALD CRAWFORD, H.M. Consulate, Oporto.

RAISING VARIETIES OF AUCUBA JAPONICA.

THE *Aucuba japonica* is so handsome, so varied in its foliage and markings, and so ornamental when in fruit, that these qualities, combined with its hardiness of constitution, and the facility with which it yields to the efforts of the hybridist, render it one of the most promising objects on which the amateur can bestow his attention.

Though unacquainted with recent introductions, and possessing but limited experience in the crossing of the different varieties, I venture to offer a few remarks on the improvement of this interesting plant, with the hope that more competent hybridists will enlarge on the subject.

The *Aucuba* is accommodating as regards climate; for example, last year my plants produced more than a thousand berries. The plants were in the open border, in a cold frame, in a greenhouse, and lastly in a vinery, where the temperature varied from 35° to 110°, and in each situation the plants have remained in perfect health, the only difference being that the fruit is either quite ripe or ripening.

That the sporting tendencies of the *Aucuba* are great is evident from the repeated instances of *lati-maculata* and *aurea* having been raised from cuttings of *maculata*; again, *longifolia variegata* originated in a similar manner from the green *longifolia*. Further, when *maculata* is judiciously crossed with highly-coloured males, its berries produce many varieties, a fair proportion of them possessing great beauty. Thus, 330 berries gathered from one plant of *maculata* gave 46 green plants, 45 slightly spotted, 3 yellow selfs, and 65 beautifully marked, leaving 171 that decayed, owing to mismanagement, imperfect berries, and a deficiency of bottom heat. On the contrary, 120 plants, raised from berries of *viridis* fertilised with *picta bicolor* and Siebold's *maculata*, are almost all green-leaved, the exceptions being a few that have leaves neatly marked, and six or eight yellows.

The produce of these two batches of seeds indicates that green parents are to be avoided, and that all green males, excepting where the foliage is desirable, should be destroyed, as the female plants are more serviceable for contrast or for decorative purposes.

I hesitate to offer any very distinct advice regarding the selection of berry-bearing varieties; *maculata*, on account of its cheapness, is for the present valuable, and as *Aucuba himalaica* will freely hybridise with *Aucuba japonica*, it should be tried. *Longifolia* is such a free seeder and bears such large berries that it must be a certain favourite; it is also said to produce good varieties. *Longifolia variegata* and *limbata* will probably afford good results, but the former is yet very scarce, and the latter a shy bloomer.

In selecting male plants, those possessing deep green leaves well covered with white markings are the most valuable, whilst varieties like *picta* are objectionable, because the large yellow blotches on the centre of their leaves cause them to curl up, and become unsightly. *Bicolor*, on account of its small foliage, is free from this fault, and if the pollen of its flowers be used for impregnating those of *longifolia variegata* the result will probably be handsome forms of small or narrow-leaved blotched varieties. Siebold's *maculata* is good if the farina is taken from blooms produced on finely-marked branches. Here it is proper to observe that several males, such as *picta* and *bicolor*, often bear green branches; these must be removed, otherwise flowers fertilised from the male flowers of such degenerate shoots will produce worthless berries.

Much time and trouble may be saved by preparing the male flowers a few hours before they are required for use. This is accomplished by taking them off the plant before they exude a viscid secretion, which, if allowed to remain, destroys the pollen; the petals may then be shortened, and the blooms pinned on a board covered with tinfoil.

With a pointed bit of blotting paper remove the secretion when it appears, and then with the aid of a very small camel-hair brush and a strong lens the farina may be rapidly applied to the stigma of the female blossom. By adopting these simple precautions, from sixty to a hundred flowers may be fertilised with the pollen from five male blooms.

To conclude, occasionally it is desirable to save the farina of some particular plant either on account of its too great forwardness or because of its scarcity. This may be done by forming a little book by binding together two small squares of glass, such as opticians furnish at 1s. 6d. per oz. for mounting microscopical objects; these books may have the name of the plant written on their backs, and be then folded up in tinfoil.—A. C.

CULTURE OF THE ORANGE FOR DESSERT.

Was not Mr. Rivers one of Pomona's prophets, when he wrote that orchard houses would "glisten on highland and lowland, and gladden many a garden lover with their genial climate and varied produce?" He has lived to see the fulfilment of his inspirations, for he writes in the early editions of his work, "The Orchard House"—"Orchard houses are now 'familiar things,' hundreds are rising up all over the face of the country; no garden structures have ever so rapidly advanced in popularity." There was no lack of converts, and there were disbelievers, myself of the number; and it is well that there are such in most cases, for if every innovation were received without doubt, no opposition shown to its advancement, the old system of things would be upset, and the community ruined. It is well, I repeat, that there are different opinions, for it is by the advocacy of a certain thing on the one hand, and the contending forces of opposition and criticism on the other, that converts are gained or lost, the lukewarm arrive at a conclusion for or against, and the outer world adopts or rejects, and becomes reconciled to the new state of things.

Now we have another prophet amongst the followers of Pomona. Mr. Pearson commences a sanguine and enthusiastic article, page 23, with the statement, "Oranges will be grown largely in this country for their fruit," and the Editors lend their voice to the furtherance of the object, for they say, "Ere long we shall find them as commonly grown as Vines and Cucumbers now are;" but I fail to notice that any of the parties are sanguine enough to state that Oranges will be grown in this country to pay, hence we find them associated with Vines. I can, of my own experience, fully endorse all that Mr. Pearson and the Editors anticipate of the culture of the Orange for its fruit, having seen and grown in this country Oranges of good quality and size, and supplied them for the dessert, where they were in greater request than those of foreign growth, on account of their aromatic sweetness.

I may state that the trees were grown as standards, having stems from 4 to 5 feet in height, and that they were of the Tangerine and Maltese Blood varieties; but the first of these furnished the better fruit, and continued longer in bearing, often affording a supply of fruit for six months. There were also the Myrtle-leaved and the St. Michael's varieties, both good, and the back wall was clothed with the Shaddock and Lemon. The house was a lean-to, 13 feet 6 inches high at the back, and 6 feet high in front, with a stone shelf along the front and ends, on which were the Otahite and the above-named varieties of Orange in pots.

In every sense the house was an Orange house, only there were Vines in addition to the Orange trees. The Vine border was outside, but the Vines were planted inside, at 4 feet apart, and trained with single rods on the spur system. There were twenty Vines, so that the length was about 80 feet, and the width 20 feet, but the width was diminished by 2 feet in winter, for the front lights were brought inwards, and the Vines laid outside along the front to rest. The lights worked in a slide, and were easily moved, so as to include or exclude the Vines. This system of moveable front lights is fully explained in "Sanders on the Vine," and is well worthy of adoption if a temperature has to be maintained that would be injurious to Vines kept in a house when they are at rest, as the house is thus set at liberty for other purposes. In the centre of the house was a brick pit or bed 9 feet 6 inches wide internal measurement, and raised about 2 feet above the paths, its depth being about 5 feet. The pathway went round the bed, and at the back was a border for the Lemons and Shaddocks on the back wall. This border was 4 feet wide, or the full width from the back wall to the bed, the pathway crossing the border being

of laths. At both ends, and in front, there was a stone shelf 3 feet wide in summer, but 2 feet less in winter, owing to the lights being brought inwards, the only fault being the narrowness of the front pathway, whose width was reduced to 2 feet; and the front shelf was practically of no use when the Vines were put out, the small trees in pots having to be accommodated with a place on the pit edge.

The house was originally intended for the growth of Vines in summer, and the preservation of the Orange trees in winter, as in times not very remote Oranges were grown largely in tubs for ornamental purposes, being placed out of doors in summer, and taken in in winter. The central bed, I believe, had been formerly, on the removal of the Orange trees, filled with tan and used for Pine Apples, but the Orange trees in time, from injudicious treatment, had become unhealthy, and well they might, when roasted in winter and starved in summer; and instead of being placed in the open air they were kept in-doors, and the tubs plunged in the tan instead of the Pine Apple plants. The Orange trees, though half dead, recovered very fast, and it was thought they would be in fine condition for the terrace in the following year, but when the time came for their removal it was found that the tubs were rotten. New tubs were suggested, but not given, and at length the Orange trees were planted out in the pit in two rows, those with the tallest stems at the back of the pit, and the short-stemmed trees in front. They were planted about 2 feet 6 inches from the pit edge, and 6 or 7 feet apart. Before planting the pit was emptied of the tan, and the bottom covered with stones and brickbats to the depth of 2 feet, which left about 3 feet for soil, with which the pit was filled. It consisted of the turf from a pasture, where the soil was a sandy loam, taken off about 2 inches thick, and which had been laid up for twelve months in layers, with sheep and horse droppings. Previous to use the whole was chopped up, but not very finely, and thoroughly mixed with one-fourth part of river sand. The drainage was covered with turf, grass side downwards. The proportion of manure would amount to about one-fourth of the turfy loam, so that the compost would be turfy sandy loam one-half, sheep and horse droppings one-fourth, and sharp sand one-fourth, and when put in the bed every sixth barrowful was of leaf mould, which had evidently been overlooked when the compost was prepared. In this compost the trees were planted; but the pit had not been filled sufficiently, as the soil settled below the pit edge, and it had rather an unsightly appearance. That, however, did not interfere with the growth of the trees. They grew well, fruited well, and supplied many a handful of fragrant flowers, and large, good-flavoured fruit by hundreds for the dessert.

The treatment of the trees, which was very simple, was as follows:—In February, whatever pruning was necessary was done; it consisted of cutting out old and dead wood, and so thinning the heads as to clear them of the weak wood and prevent crowding. The trees were then well washed with soft-soap water, using a sponge, and washing every leaf on both sides. This was the most dreaded proceeding of all, but nevertheless necessary to keep under the Orange scale, honeydew, and the black fungus. A similar washing was given in July. The Vines were also coated with the then infallible paint of sulphur, soft soap, tobacco water, and clay, and the front lights put in the outer groove, so that the Vines were within the pale of the house. The Orange bed was top-dressed with about an inch deep of equal parts of old cow dung, sandy loam from turf, and leaf mould. At the same time the pot trees were repotted, pruned, and washed. The Lemons and Shaddocks fared the same as those in the pit, only the trees were more severely pruned, and were more troublesome to manage on account of the untying and retying, and the greater difficulty in washing.

On the 1st of March, the syringing of the Vines twice a day began, the Orange trees were sprinkled overhead every morning, and the whole of the walls, paths, &c., were kept moist by sprinkling with water twice or thrice a-day according to the weather. The bed was well watered about twice in March, three times in April, and every week or ten days afterwards up to September, when the intervals between the waterings became more distant, the soil being at all times kept moist, but never very wet after August. As the season advanced the Vines, Orange trees, and, indeed, the whole house, were syringed twice a-day—in the morning at 8.30, and after 5 o'clock in the afternoon—until the Grapes turned red, when syringing was, of course, discontinued as far as the Vines were concerned; the Orange trees, however, were syringed up to October, but after the Grapes began to ripen, once a-day only,

and in the morning. The setting of the Grapes was made no pretext for discontinuing the syringing, and they set well, and coloured well. The Vines were put in their winter quarters in November, the lights being placed in the inner groove, and the house became an Orange house for the winter. The Vines were pruned between Christmas and New Year's-day, and in severe weather were covered with mats.

In June the Orange trees had a slight top-dressing of sheep droppings, and another at the end of August. No manure water was given. These top-dressings were not sufficient to cover the surface, but nearly so, and each was followed by a good watering. I ought to have stated, that before applying the top-dressing in spring, the bed was lightly pointed over with a fork, and any moss on the surface scraped off and taken away. The temperature in winter from October to March, was from 45° to 50°, the latter being the maximum from fire heat, air being plentifully admitted whenever the weather was mild, but the temperature was not reduced below 50° in the day by air-giving. By the end of March the heat was increased to 55°, the day temperature not exceeding 65°, without air, which was at all times plentifully furnished. After April the temperature was gradually increased, but no fire heat given after the middle of May, and only to keep the night temperature from falling below 55° in April and May; therefore, the increased temperature was from solar heat. The temperature fell in autumn with the decline of solar heat, fires being put on in October or November, to maintain the temperature necessary for the ripening of the Oranges—from 45° to 50°, the atmosphere being kept dry from October to March, during which time, or for a period of six months, Oranges may be said to be in season when cultivated in this country, if sufficient heat be afforded to ripen the fruit. They were plentiful at Christmas.

I do not describe the above mode of cultivation as worthy of imitation, but as affording some proof of the feasibility of profitable Orange culture, and the reason why I am a convert to Mr. Pearson's prophecy, "Oranges will be grown largely in this country for their fruit," and which accords with the language employed on many occasions by Mr. Rivers. I do not, however, see the necessity of associating Vines with Oranges in the same house. They can both, no doubt, be grown tolerably well together, but much better separately; and as to Orange trees requiring bottom heat in a house beyond which their roots do not extend, I am doubtful, but think such heat altogether unnecessary.—G. ARBER.

THE ROSES OF 1868.

"AN AMATEUR" wishes for some notes on the Roses of last autumn, and says that the usual lists have not appeared to enable him to judge. As I have generally supplied those lists, I must now merely say that I at last gave up doing so as a hopeless task. I have ever said that descriptions as given by the raisers were utterly valueless. The raisers saw with eyes that others did not, and praised their babies *à l'outrance*, while we thought them less attractive than many in other nurseries; and as I had but little opportunity of seeing the Roses "at home" last year, I have been unwilling to say much.

I fancy among Tea-scented Roses there may be some good varieties. Guillot fils, who has given us Madame Margottin and Bouton d'Or, has others, so has Ducher, and I should be inclined to try them all—i.e., Adrienne Christophle, La Tulipe, Marie Sisley, and Monplaisir, the latter a seedling from Gloire de Dijon, and bearing, I fancy, a very close affinity to it. There is also Margarita, a Noisette, which is said to be of first-rate merit.

Of Hybrid Perpetuals there is, as usual, a goodly array. Some I have seen, others I have only heard of. I should try Adolphe Brongniart, Clovis, Henri Ledechaux, Leopold II., Madame Creyton, Madame Jacquier, Monsieur Journeaux, Perfection de Lyon, *Souvenir de M. Poiteau, Reine Blanche, and *Thyra Hammerick. The only two I have seen are marked thus*. Thyra Hammerick was generally praised by all I met with in Paris last June, but I was not there until it was too late to see anything of it. Our own Duke of Edinburgh (Pant and Son), is without doubt a good and vigorous-growing Rose, but some of the Roses we have already will be very difficult to beat. If a Rose in crimson is better than Charles Lefebvre, Madame Victor Verdier, Duchesse de Caylus, or Alfred Colomb it must be a "topper;" if in pinks it beats Comtesse de Chabillant I will do homage to it. In yellows it will be difficult

to wrest the bâton from Maréchal Niel's hand. We want, it is true, whites and bright pinks—such colours as Prudence Besson or Miss Ingram (alas! that she is only a summer queen), and all Rose-lovers would hail such additions with pleasure; but of the vast number of new Roses we must use Mrs. Brown's favourite expression, "Rubbish! says I."—D., Deal.

HORIZONTAL CORDONS.

In answer to "P." of Kent, I should recommend for his "high-boarded fence facing S.E., with galvanised wire strained against it," diagonal Pear cordons as being very profitable and quick in bearing. As the fence is high the cordons may be single, and such are easiest to form; but if the fence had been of only moderate height, double diagonal cordons would have been preferable. Let the lower third of these cordons, in either case, be more freely developed than the upper portions; they are handsomer thus treated, and the unsightly after-languishing of the shoots at the base is prevented.

As to the advisability of "low (horizontal) cordons of Pear trees," they would only be desirable in certain cases, for where the diagonal form can be used freely it is far more profitable than the horizontal. Much has been of late written about horizontal cordons to small purpose. They can never supersede other larger styles of training, but they are useful as supplementary to them, and can never be employed otherwise with reasonable hopes of success. Used, however, for their proper purpose—that for which they were destined originally—viz., as edgings for borders, and even in these only when they do not interfere with the pruning of the more important wall trees, they are excellent. Again, in small gardens they are pleasant to see, and furnish a certain succession of fruit not otherwise easily attainable. In larger gardens there should be space for every style of any pretension, and as edgings for wide fruit borders they would be well placed. In this way might be secured some good table varieties of fruit, which it would not, perhaps, be worth while to grow on a larger scale. As a means also of testing side by side new varieties, there can be no better way. In the present instance it is presumed that horizontal cordons are intended for some of the above-mentioned purposes, for they are wholly inadequate for entirely supplying large families, and for market produce are comparatively valueless.

Standard diagonal cordons, for obvious reasons, are better adapted for larger establishments, and are becoming more employed. I know of some of these cordons on wires which reach to between 30 and 40 feet, and are pictures of beauty. When they become better known we shall hear less of horizontal.

Of the Calville Blanche Apple, selected by "P." of Kent, as one of a few good sorts, I must here say that in my judgment it is an Apple considerably overrated, even by the French themselves, who, in Apple culture, are far behind the English, as we all know. I have lived long abroad and seen much of this fruit, and have had it for years growing on the French Paradise stock; but though a fair, and a good keeping Apple, it is not, in my opinion, suitable for our climate, nor a profitable market Apple. It is, as Mr. Rivers says, inferior to many good English sorts, or at least it does not merit all the praise bestowed on it.

In selecting a few choice varieties of table Apples for horizontal cordons, I should advise such as from their natural habit of growth succeed well with the artificial training proposed. Such varieties as Early Harvest, Cox's Orange Pippin, Braddock's Nonpareil, Mannington's Pearmain, Court-Pendu-Plat, and Sturmer Pippin, will all do well.

The choice of stocks might be left to the decision of local judgment; there would, however, be hardly any place where the English Paradise would not fulfil every condition of success.

On the whole, I think, double horizontal cordons are more valuable than the single horizontal cordons. They are, at least, more handsome, and allow greater scope.—T. C. BRÉHAUT.

EAST LOTHIAN STOCKS.—The wonderful account published of these Stocks as autumnal bloomers induced me last year to send to Edinburgh for some genuine seed. It was sown in a slightly-warmed orchard house on the 10th of March, and the plants were in due time transferred to the open quarters. Nothing could have grown better or looked healthier, but not a single bloom made its appearance. Mild as the winter has

been, the plants look very scrubby, and they are now just showing for bloom.—G. S.

CAMELLIAS IN THE OPEN AIR.

THE excellent article on out-of-door Camellias by Mr. Robson (page 143), leaves but little for me to say on the subject; this little I simply offer as additional testimony from a different locality as to the possibility of extending to out-of-door culture one of the most interesting and beautiful of all flowers.

Of the hardiness of the Camellia there need not be a shadow of doubt, at least as regards the south of England; and although this fact has been known to horticulturists for many years, yet it does not appear to be generally believed, probably from the circumstance that the plant is almost always met with under the protection of glass structures; and if here and there a solitary plant is found in the open ground, its condition is not always such as to inspire confidence in the adaptability the Camellia as a subject for garden decoration. No inquiry has been often repeated by visitors to my garden than,

"How do you protect your Camellias in winter?" "How well they look!" &c., and when assured that the plants have no protection, an intimation of surprise always follows. I quite agree, therefore, with Mr. Robson that the sooner the impression of non-hardiness is removed the better.

I have seven plants of different varieties that have now been five years out of doors; they have, therefore, during that time been exposed to nearly all the vicissitudes of weather and extremes of heat and cold that our climate presents. Their history is simple, but sufficiently conclusive, to establish the claim of the Camellia to receive some further attention and trial as an out-of-door subject for cultivation. The merits of the plant as regards flower, foliage, and habit are so well known, that the greatest inducements are thus held out to extend the range of its usefulness, and while confident that it may be considerably extended, I am far from advocating an indiscriminate planting of Camellias in quantity in any situation, under our present limited experience of it as an out-of-door plant. Single plants or groups might be put in many spots at present occupied by less interesting objects, and afford so much the greater pleasure to the owner.

My plants were planted in the open ground in a group in April, 1864, after they had shed their bloom for that season; they were not large, but perfectly healthy and of good form. They were set in light turfy loam, procured from a neighbouring common, and have uniformly made good growth every successive year. They were placed in the warmest and most sheltered spot in the garden, under the impression I then had, which I now find may be much modified, that they should have the warmest spot possible. They have also bloomed freely, and at the present time (February 27th), are loaded with buds, many of which are expanded; but those are chiefly of the Double White variety, which has always opened its flowers earliest. The time of flowering has varied with the season—with a severe winter, such as we had two years ago, the bloom was retarded till the middle of April; at other times the flowers have been well opened during March.

The chief drawbacks to these Camellias have been rain and wind while in flower, an excess of wet while in bud, and the direct rays of the sun upon the foliage in hot weather. Rain and wind upon the expanded flowers destroy them in a day, successive days of sunshine also shorten their duration, and too much wet while in bud causes the buds to drop off; very many did so in the rainy weather of last December and January, but this does not appear to be altogether a disadvantage, as they were too numerous, and the bloom, consequently, would have been inferior. The effect of too much sun on the foliage is to change its hue to a lighter or even yellowish green, but the effect is partial; the lighter kinds are affected to a much greater degree than the scarlet or darker-flowered varieties, some of which retain the deep glossy green of their leaves under all circumstances.

From the time of their being first planted out till now, the plants have received but little treatment at my hands. After flowering I have generally removed a few handfuls of soil around the plants, and replaced it with some cool peat earth. I cannot state positively that this has done any good, but it has certainly done no harm. The spaces between the plants have been kept free from weeds, and the soil slightly stirred with a fork when that appeared needful. One summer, when the weather was very dry and hot, I watered copiously with

water that had stood in the sun all day. This did no good, or rather it did harm, for the foliage curled and dropped in abundance, so much, indeed, as to cause some apprehension for a time for the safety of the plants. I have never watered since, and during the drought of last year, they braved the ordeal satisfactorily.—ADOLPHUS H. KENT.

I HAVE a Camellia japonica, planted during 1838 by my father, in a north-east angle of the house. It has never had the least protection since it was planted, covers a space of 21 square feet, flowers beautifully annually, and is generally in flower at the beginning of the year. It has at the present time (March 1st), upwards of two thousand blooms out. I have likewise in the shrubberies two large plants of the Double White, 10 feet high, covered with blossom. They are quite pictures, but unless we have a mild winter they do not flower so well. We have had Laurels and other shrubs killed by frost, but the Camellias have never been touched by it.—THOMAS SPRING, Cowdrey Park, Sussex.

PLANTS IN FLOWER DURING FEBRUARY.

Feb. 4. <i>Andromeda floribunda</i> .	Feb. 12. <i>Helleborus foetidus</i> .
<i>Ulmus montana</i> and varieties.	<i>viridis</i> .
<i>Symphoricarpos vulgaris</i> .	<i>Primula acaulis</i> .
<i>Cydonia japonica</i> .	<i>Daphne mezereum</i> .
<i>Amygdalus communis</i> .	<i>Ribes sanguinea</i> .
<i>Berberis nervosa</i> .	<i>Alnus glutinosa</i> .
<i>Dianthus barbatus</i> .	" 16. <i>Hepatica triloba</i> .
<i>Anemone hortensis</i> .	<i>Phlox setacea</i> .
<i>Ulmus campestris</i> and varieties.	<i>verna</i> .
<i>Draba verna</i> .	<i>Armenica vulgaris</i> .
<i>Viburnum lucidum</i> .	<i>Potentilla alba</i> .
<i>Arabis alba</i> .	<i>Corylus avellana</i> .
<i>Myosotis palustris</i> .	<i>Buxus sempervirens</i> .
<i>Bulbocodium vernum</i> .	<i>Viburnum tinus</i> .
<i>Erica carnea</i> .	<i>Salix alba</i> .
<i>Kerria japonica</i> .	" 20. <i>Doronicum caucasicum</i> .
" 9. <i>Crocus aureus</i> .	<i>Vicia major</i> .
<i>vernus</i> .	<i>minor</i> .
<i>susianus</i> .	<i>Tritoma naria</i> .
<i>Cloth of Gold</i> .	<i>Viola odorata</i> .
<i>Hyacinthus</i> .	<i>Carpinus betulus</i> .
<i>Erythronium dens-canis</i> .	<i>Chimonanthus fragrans</i> .
<i>Populus tremula</i> .	<i>Amygdalis persica</i> .
<i>Juniperus chinensis</i> .	<i>Triticola uniflora</i> .
<i>Galanthus plicatus</i> .	<i>Ulex europæa</i> .
<i>Narcissus incomparabilis</i> .	" 27. <i>Pulsatilla officinalis</i> .
<i>pseudo-Narcissus</i> .	<i>Forysthia viridissima</i> .
<i>Omphalodes verna</i> .	<i>Double Daisies</i> .
<i>Berberis Bealii</i> .	<i>Populus balsamifera</i> .
<i>Thuja orientalis</i> .	<i>Saxifraga cordifolia</i> .
<i>Ulmus suberosa</i> .	<i>Polyanthus</i> .
<i>Phlox frondosa</i> .	<i>Orobis vernus</i> .
<i>Rose Gloire de Dijon</i> .	<i>German Wallflowers</i> .
" 12. <i>Scilla bifolia</i> .	<i>Rhododendron dauricum</i> .
<i>Helleborus niger</i> .	<i>Alyssum saxatile</i> .
	<i>Dielytra spectabilis</i> .

—M. H., Acklam Hall, Middlesbrough-on-Tees.

PROPAGATING VERBENAS.

I THINK your correspondent Mr. E. Wilson, page 104, uses rather too decided language in inferring, as he evidently does, that Verbenas kept in store pans must necessarily be decrepit and covered with mildew. I, in common with many others, adopt that plan, and generally find that it answers my purpose very well. There is nothing new in my way of carrying it out; but for the benefit of your readers who may be inclined, after Mr. Wilson's condemnation, to give it up, I will relate it; and as I have now between two and three dozen pans with quite a hundred good strong cuttings in each (the best are those of Purple King, by some considered rather difficult to winter), I will take my last season's mode of proceeding as a guide.

In the last week in August we forked up a bed in a pit in which Melons had been grown, added a little half-spent litter and leaves, just sufficient to produce a gentle lasting heat, and in four or five days, we covered the bed with 6 inches of sawdust. I had our pans, which are from 12 to 14 inches across, well washed and crocked, put over the crocks a layer of old mushroom dung, and then filled up with equal parts of good loam and leaf soil to within 1 inch of the top, placing over all a thin layer of silver sand. We of course took the best cuttings we could find, and pricked them in about an inch apart all over the pans, which we then placed in the pit, plunging them up to the rim. We damped the cuttings over through a fine rose morning and evening on bright days, and in about three weeks they were struck; not 10 per cent. failed. The rooted

cuttings were allowed to remain in the same place until the middle of October, gradually hardening them off until, in five days, the lights were completely pulled off. We then placed them on the top shelf of ainery from which the Grapes had been cut. Since that time the temperature in the house has several times been below freezing—on one occasion as much as 4° below, and the result has been, as I stated, a quantity of strong healthy plants. I will leave your readers in places where space is limited to judge which of the plans, Mr. Wilson's or the above, is the better.—H. J. CLAYTON, *Hackwood Gardens, Hants.*

"MANCHESTER—TO THE FRONT."

WHEN an officer in the Peninsular war inquired during a battle, "Where is the Light Division?" the reply was, "Where they always are, in the front." When we were asked how the Manchester men would be with subscriptions for prizes at this year's Royal Horticultural Exhibition, we replied, "Where they always are, in the front." Never were we more surprised, therefore, than to be informed that Manchester is far behind Bury St. Edmunds and Leicester in the amount of prizes offered. If the local Secretary, Mr. Whitworth, 96, King Street, Manchester, would publish in the local papers a list of prizes desirable to be offered, and which were offered at the towns we have named, we think it would operate as a command—a readily obeyed command—"Manchester—to the front."

We know that the Royal Horticultural Society are desirous to issue a schedule of the prizes, but they must hesitate when they have only the following hitherto promised. What is done should be done promptly.

	£	s.	d.		£	s.	d.
Manchester Botanical Society	25	0	0	Mr. Sichel	10	10	0
"Journal of Horticulture"	21	0	0	" W. Baines	5	5	0
"Gardener's Chronicle"	20	0	0	" Shaw	5	5	0
Sir James Watts	10	10	0	" Broome	5	5	0
Lady Watts	10	10	0	" Dickson	5	5	0
H. Nicholls	10	10	0	" Brown	5	5	0
				" Matheson	5	5	0

MESSRS. CUTBUSH'S SHOW OF SPRING FLOWERS.

DETERMINED to be first in the field, Messrs. Cutbush opened on Saturday last at the Crystal Palace their annual show of spring-flowering bulbs—a show which will fully sustain their well-earned reputation as cultivators of these charming flowers. The Hyacinth, in particular, which constitutes the great feature, is most worthily represented in its various hues of white, yellow, blush, rose, crimson, light blue, dark blue, and purple deepening into shades nearly approaching to black. Conspicuous among the pure white kinds are several splendid spikes of Mont Blanc; and of blush Emmeline, Gigantea, Grandeur à Merveille, and double Duke of Wellington are equally fine. Of red shades Macaulay, Von Schiller, Mrs. Beecher Stowe, Cavaignac, and Amy are most brilliant. The compact spike and bright crimson bells of the last, though it is not an expensive kind, prove very effective, especially for early display. Haydn, mauve, is splendid; and of blues, Charles Dickens, Grand Lilas, Orondates, Nimrod, and Baron Von Toyll are excellent wherever they occur in the four 70-foot rows, of which the Hyacinth-part of the exhibition consists. In front of the Hyacinths are arranged Tulips, mixed with Narcissus, but the former are not yet sufficiently advanced to enhance by their gay colours the general effect. In addition, two stages each 70 feet in length, separated from the Hyacinths by a central division, are filled with Camellias, Azaleas, Acacias, Cinerarias, Epacrises, Dentzias, Cytisus, fruiting Aucubas, and a miscellaneous collection of plants in flower. A neat centre between the two oblong double stages is formed by a circle 12 feet in diameter, occupied by a Dicksonia, surrounded by Azaleas and Acacias, and these again encircled by rings of Narcissus, Colens Wilsoni, and Centaureas with Cyclamens placed alternately.

The exhibition will continue open till the 19th inst., and will doubtless increase in interest as the Tulips and some other flowers become more fully developed.

WINTERING PELARGONIUMS.

If Mr. Bowly will refer to my notes in page 64, he will see that I advocated nothing so absurd as the wintering of Pelargoniums under thatched hurdles, even in Kent; I simply adverted to it as an excellent means of protection from late frosts and cold

winds early in spring. If glass lights be substituted for the hurdles, the plan may be just as useful in the colder climate of Yorkshire.

As regards Mr. Peach's allusion to the breaking of the roots when the plants are lifted, I may state, that by planting them in soil rendered somewhat rough by using a good proportion of flakes of manure or rough leaf mould, and by exercising an ordinary amount of care in lifting, good balls may be had, and the roots suffer but slightly, certainly not enough to cause any check to the plant. The best and surest method in this case is one which I have already detailed in an article on cold pits, and that is to take each plant as it is shaken out of the soil of the cutting pan, enclose its roots in some rich free soil, and envelope the soil in moss, which is bound firmly together with bast, thus forming a compact mossy ball nearly the size of one's fist. The plants are then placed side by side, and enough of the same soil is scattered amongst them to conceal the moss from view. When the plants are removed to the flower beds, the roots are to be seen penetrating the moss on all sides, and laying hold of the soil by which they are surrounded.—EDWARD LUCKHURST, *Regent House Gardens, Kent.*

SIZES OF FLOWER POTS.

WHAT is the scale of measurement of flower pots adopted by correspondents and in your Journal generally? We are much perplexed by seeming to find that a 48 sized pot is a pretty large one. The manufacturers here make a certain amount of clay stand as their unit, and number the pots according to the number of pots which they can make out of it. Thus, if they make thirty-six pots out of it, they call the thirty-six pots so made a dozen of 36's. It is evident, therefore, that the higher the number the smaller the pot. The 48-pots with us are mere thumb pots; the 36's are such as are generally used by nurserymen for bedding plants for sale—about 2½ or 3 inches across the top of the pot.

I have been puzzled frequently to follow your directions, in consequence of your scale being, as I fancy, very different from ours; and as my knowledge of gardening is almost entirely derived from your Journal, this is an important matter.—NEWBOLD RECORD.

[The sizes of pots ought always to be stated in inches, and it is an oversight when we do not alter the figures in the communications which specify only the manufacturers' numbers. The following is an explanatory table:—

	Inch diam. at top.	Inch deep.		Inch diam. at top.	Inch deep.
Thimbles are inside	2	2	Sixteens (16's)	9	9
Thumbs	2	2	Twelves (12's)	11	10
Sixties (60's)	3	3	Eights (8's)	12	11
Forty-eights (48's)	4	5	Sixes (6's)	13	12
Thirty-twos (32's)	6	6	Fours (4's)	15	15
Twenty-fours (24's)	8	8	Twos (2's)	18	14

The above are about the sizes in inches, for at each pottery they rather differ in size, and none of the pots shrink exactly alike during the burning.]

CULTURE OF THE CALCEOLARIA.

THERE are few plants better adapted for an effective display in the greenhouse during the spring months than the herbaceous Calceolarias; and, not being very difficult to cultivate, it is desirable that it should be more extensively grown.

The named varieties are now seldom seen in cultivation. Few nurserymen's catalogues give a list of them, and fewer still can supply good plants. The principal reason, I have no doubt, is that it is not found profitable to cultivate them. Numbers of the plants are lost after the flowering season is over; at that season there are many demands on a gardener's time, and the Calceolarias are placed in some corner, where they are neglected, and soon become a prey to green fly or other insect pest. If it is intended to perpetuate any particular variety, the plants must be attended to as soon as the flowering season is over; the flower stalks are first cut off, then remove the surface soil from the pots, replacing it with fresh material, into which the young shoots can be pegged down, and they will soon strike roots if the plants are kept in a healthy condition. They ought to be placed in a cold frame at this time; and it is as well to have the back of the frame turned to the south, as the plants will not in this way require so much artificial shading. When plenty of roots are formed the young plants may be removed and potted separately, or several plants

may be placed together in one pot, according to the size of the specimens required. I have seen named varieties in the hands of good cultivators grown into as fine specimens as seedlings; they require more care, however, and more easily fall into an unhealthy state.

The best method for ordinary purposes is to grow seedlings, as large specimen plants can be obtained from seed in less than twelve months. The seed may either be saved at home from the best varieties, which is the surest way to secure a good stock, or by purchasing from a respectable nurseryman. A good time to sow is in June for early flowering, and in the beginning of August for late flowering. The seeds are very small, and a half-crown packet does not contain a large quantity of them. They must, therefore, be carefully sown. The best way known to me to do this is to prepare a compost of two parts loam to one of leaf mould, with a liberal proportion of silver sand; then take a clean pot or pan, and put plenty of crocks in, covering with a little moss to prevent the compost from mixing with them. Fill the pot three parts full of the compost, the portion near the surface being passed through a fine sieve, sow the seed thinly on an even surface, and cover it lightly with silver sand. A little damp moss must be placed on the surface until the seeds vegetate, when it may be removed. I generally place the pot in a shady part of the greenhouse. The young plants will appear above ground in a fortnight or less, when they must be carefully protected from the direct rays of the sun, and sheltered from drying winds; an hour's sunshine will shrivel up the young plants in July or August.

As soon as the young plants can be handled they ought to be potted singly in 60-sized pots, using the same compost as that described above. The best place for the plants is a position near the glass; they must still be shaded and sheltered from wind as before, and kept free from green fly. This is the worst enemy of the Calceolaria, and the best method to free the plants from it is to smoke the house with tobacco until the fly is all destroyed. Some cultivators recommend dipping the plants in a solution of an insect-destroying compound, but, whatever system is pursued, the fly must be effectually destroyed, otherwise the plants will do no good.

If the plants are in a healthy state they will soon require shifting into larger pots. At this time one-sixth part of rotted cow manure should be added to the compost, using loam of a turfy nature. They will require to be shifted twice more after this, using for the last shift pots of from 8 to 10 inches in diameter inside measure. In March and April the flower stalks will be growing upwards, and will require to be neatly staked-out, using small sticks about 18 inches long, more or less, according to the appearance of the plants.—J. DOUGLAS.

GENTIANAS.

Among neglected flowers may be included the Gentians, some of which are natives of our own land, others from far-off countries. To cultivate them all would take up a large space of ground, supposing they could all be brought together. Some of them are of robust habit, others are of very diminutive stature, but all are beautiful. Perhaps a few remarks upon some of them may not be out of place at this season, as several of them may be found among the flowers of spring. I think they ought more frequently to be met with. They are not a very difficult race to cultivate, but require care and looking-after.

Gentiana acaulis is that most frequently met with, and will bear almost any amount of hard usage. I have seen it used as an edging to walks instead of Box, and though often trampled upon and wheeled upon by the careless, yet it might be seen in the spring presenting its large handsome flowers to the sun. I remember seeing, some years ago, in the centre of a flower garden in a very dry situation, a large bed planted with *Gentiana acaulis*, and in spring it was for a length of time a mass of bloom; indeed, it was so prized for its beauty in spring that it was suffered to remain. The impression which it made upon me will not easily be effaced from my memory. During dry weather the appearance of the bed was anything but pleasing, for the plants looked as if dead, but when rain came they revived, the plant being very tenacious of life. This Gentian is said to exist in some of the Welsh counties, but I have not seen it in its mountain home; it will grow in almost any soil or situation, but does not bloom so freely in the shade.

Gentiana alpina is said to be a variety of *G. acaulis*; it is a lovely flower, but has much smaller blooms and of a lighter

colour. It is an acquisition to our spring flowers, and like the former does well in most places.

Gentiana pneumonanthe is another native beauty, to be met with on some of our moist peat moors. Its large pale blue bell-like flowers peeping out from among the grass and Heather, are a sight worth seeing. It is best cultivated in a moist peat border, but it may be grown in pots. Its roots require a moderately moist soil in which water does not stagnate, and when planted in the border moss or some other material should be placed over the roots to protect them from drought. If grown in pots they should be plunged over the rims in a rather shady place. There is a white variety, but it is seldom met with, though very desirable on account of the variety which it affords when planted along with the blue-flowered kind. They are very beautiful.

Gentiana barvarica is a charming plant which is a little taller than *Gentiana verna*. It is at home among moist turfy peat mixed with coarse sand or freestone. Its flowers being of an intense and very brilliant blue, it deserves extensive cultivation.

Gentiana ciliata is a very desirable plant, growing 8 or 10 inches high, and flowering in spikes. The flowers are of a pretty blue and fringed, the latter circumstance adds considerably to their beauty. It grows well in a mixture of mellow loam and limestone, requires good drainage, and should be kept moderately dry during the winter.

Gentiana lutea is a first-rate herbaceous plant for borders, growing 2 or 3 feet high, producing whorls of fine yellow flowers, and large handsome foliage. It is very desirable, but seldom met with, and being of easy culture is an acquisition to any collection.

Gentiana nivalis is another little gem. It is of diminutive habit, growing from 2 to 4 inches high, and has flowers of an intense sky blue. It delights in a rich fibrous loam, with a little sandy peat. Being an annual it is of easy culture, and well repays the little labour bestowed.

Gentiana amarella, another annual and native Gentian, may be met with in many parts. I have seen acres of ground on the great magnesian limestone ridge which runs through Yorkshire, studded with this plant, and its different colours, when seen in such masses, have a very fine effect. The colours varying from dull purple to almost white, a mixed patch in the border is very pretty. It attains from 4 inches to 1 foot in height, and is of a pleasing pyramidal habit. It is of easy culture, succeeding best in a mixture of strong loam and limestone.

Gentiana frigida is another charming plant seldom met with, its flowers being white; it is very desirable for borders. It grows from 4 to 8 inches high, and succeeds well in a mixture of peat and loam in a moderately dry situation.

Gentiana verna is another star of the train that must not be omitted; though one of the least it is one of the most conspicuous of the family, and perhaps more interest is attached to it than to any other Gentian. Who has ever looked on this beautiful native flower decking our mountain pastures, and not been struck with admiration? Those who have not seen it in Teesdale, studding acres with its lovely flowers, can have no conception of the impression that it makes on the lover of nature; and I would refer anyone desiring more information on the subject to Baines's "Yorkshire Flora," where there is a most interesting account of the Teesdale flora, which includes some of our choicest native plants.

Gentiana verna may be successfully cultivated in a peat border or in pots; it does not suffer in a slightly shaded situation, but must not be allowed to want moisture. When it is planted out, I have found it good practice to place stones or pieces of slate round the plants in dry weather. It succeeds well in a compost of hazel loam, sandy peat, pebbles, and charcoal dust. Good drainage is essential. Its lovely flowers will repay early in summer any labour bestowed upon it.

There are many other interesting Gentians. The dwarfier kinds are all well adapted for rockwork, the taller ones for the borders.—M. H., Acklam Hall, Middlesbrough-on-Tees.

POMOLOGICAL GLEANINGS.

AUSTRALIAN APRICOTS.—In Dilke's "Greater Britain," we often find him giving his opinion on fruits. In vol. ii., he writes from Echure, on his way to the Murray River—"The week before my visit, some ripe Oats had been cut down to stubble by the hot wind. On the other hand, the Victorian Apricots, shrivelled by the hot wind, are so many lumps of crystallised nectar, when you pierce their thick outer coats."

This description reminds me of orchard-house Apriots, which, when their skins are shrivelled, are the most delicious of fruits.—PERSICA.

—MORMON PEACHES.—In vol. i. of the same work, Mr. Dilke gives the Mormons' opinion of our Peaches. By the way, I think it quite probable that but few of the "brethren" ever tasted a Peach in England. He says that the Peaches gathered from standard trees from Mormon gardens, were so mellow, that their flavour would reduce our English gardeners to despair. Moreover, his Mormon friends said that our English Peaches ripened against walls were roasted on one side and frozen on the other. Mr. Dilke should have tasted some well-ripened Peaches from an orchard house before he wrote about "mellow Peaches."—PERSICA.

GARDENING IN THE WEST.—No. 7.

A PHASE of American climate, which appeared to be inexplicable on any previously known meteorological principle, seems to be explained very completely by Professor Tyndall's demonstrations of the power of humid air in opposing the radiation of heat from the surfaces of our fields and gardens. I refer to the extreme variations between day and night temperatures which prevail on the dry prairies and on the dry elevated valleys of the Alleghany range of mountains. The plateaus of these valleys are from 200 to 400 feet above the levels of the larger streams, and as much below the summits of the enclosing mountain ridges. Killing frosts sometimes occur on them as late as June and as early as August. The June frosts are fatal to fruit, and crippling to wood growth of all kinds and to Clover; and if they occur when the heads of Wheat or Rye have just issued from their sheaths they leave what is, perhaps, a luxuriant-looking crop of straw, yet with so little grain as not to be worth harvesting.

When August frosts occur they are not less disastrous. In a single night the beautiful fields of Indian Corn, and of Pumpkins and Potatoes, and the principal crops of the gardens—Tomatoes and Beans (Haricots), are scalded to death, and remain grey and ghastly through the autumn—sad evidence of the cruel visitation.

Along the streams and near them, where we should naturally expect greater cold, such very untimely frosts scarcely ever occur, and but seldom on the slopes of the mountains; doubtless because the air is charged with aqueous vapour, while over the dry valleys it is pervious and absorbent, greatly robbing the unsheltered earth of its precious heat.

These valleys have a floor of limestone, an ancient deposit upon the metamorphic rocks (pre-Silurian), a mile or thereabouts in thickness. In some wondrous convulsions this enormous bed has been broken up and tilted in vast cakes of frequently many miles in length, and often two or three miles in breadth. The innumerable slate-leaves of the rock are shaken and disjoined by the upheavals and sinkings. Into these fissures all surface water, and the rills from the mountain sides, descend and disappear, flowing along between the leaves of rock, until here and there the accumulation of water bursts forth in full-grown streams often 20 feet wide, and on their banks meadows and bushy-tree foliage begin to appear.

The soil above these grand natural systems of drainage is a strong healthy loam very productive of grain; and as the adjacent mountains supply wood abundantly, the valley lands are almost entirely cleared of trees; and this denuded wind-swept surface and absence of surface water explain the lack of vapour in the air above, and the consequent exhaustive radiation of heat. For a long time these lands, which are now among the most valued grain-producing regions in the States, were passed by as worthless. The want of springs, and the pinched stunted appearance of the native growth of trees, caused the term "barrens" to be used as the general name of such districts.

These dry bright-skied districts are probably the most trying of all to the gardener who has been accustomed to a humid sheltering sky and to moderate vicissitudes of temperature; yet it is in such districts that his aid and skill are especially needed. There is a large population grown wealthy by the success of the few staples which can be grown, and a natural desire to add to the rather limited lists of trees and vegetables. It is but for the gardener to follow up the expedients he finds, with some additions from the resources of his own experience.

For instance, the American farmer prefers for his house and for his barn a site that slopes towards the east or south, and sheltered from the cruel north and the stormy west. The kitchen

and living-rooms are in the basement in front of the cellars, and are entered on a level from the east or south. The best rooms above are also entered on a level from the higher ground at the back and through the porticoed front door. Similarly the stables and the barns are under the mows, and entered on a level from the low ground of the warm sheltered side, and the thrashing floor overhead is entered from the high ground at the back. This arrangement secures most valuable shelter for man and his domestic animals, and the gardener is beginning to extend the system, so as to afford similar and suitable shelter for domestic plants. He finds himself obliged to copy the farmer's copy of the knowledge of the rabbit and the beaver, and to burrow in the warm soil for protection against the giants of the air.

An extension for a plant house into the hill slope at one end of the house, covered and fronted with glass, and opening to the basement rooms, derives warmth from the surrounding soil, and is easily supplied with a current of warm air from the kitchen fire. Such constructions have proved very effective and economical, and European Grapes, especially, are very successfully grown in them without special heating arrangements. Charming winter gardens of this kind would soon become common in the States, to relieve the long confining winters, if the gardener could be abroad enough to show the way. A new delightful world of half-hardy fruits, shrubs, Vines, and flowers would thus be revealed to homes that at present have but little and know but little of these loveliest of decorations.

The difficulty about water freezing in exposed butts and bursting them, is obviated by a similar burying in the ground. Egg-shaped pits are plastered against the earth with a coat of hydraulic cement about half an inch thick, and this shell makes an earth jug or cistern that holds water well—from ten to a hundred hogsheds in a cistern, with or without a filter bed. The water is raised by pumps that allow it to drop low enough to be out of reach of frost; and when filtered and kept in a deep and therefore cool cistern, such water collected from the roofs is the purest, best, most corrective of thirst, and most healthful for man, animals, or plants.

The bosom of mother earth will afford warmth and shelter to many plants, as Vines, that cannot be placed under glass. Thus, Antwerp Raspberries, native Grape Vines, remontant Roses, many kinds of flowering shrubs, even Peach trees, after a thorough ripening of the wood in the bright Indian summer, are laid down on the surface in December, and covered with an inch or so of soil as a security in case of the snow not remaining over them throughout March. Of course all such things must be grown quite low; and as to Roses, it is quite out of the question to grow them as trees there. The summer sun and the spring winds combine with the winter cold to parch and destroy their stems.

Many low evergreen plants are protected in a similar manner, excepting that a covering more permeable to air is necessary, such as branches of Spruce, Fir, or Cedar, or the stalks of Indian Corn. Strawberries, Greens, Wallflowers, &c., are thus secured. Wheat plants are necessarily left to risk being stripped of their covering of snow by the March sun and the March winds, when sun, and wind, and frost often play havoc on the patches that are bare. Farmers seek to add a little protection to the plants by leaving the surface covered with clods—two and three-pounders in size and weight, over the Wheat fields at seed time.

The natural blanketing of snow is far superior to any artificial covering that is practicable on a large scale. While it is frozen and dry it is wonderfully efficient as a barrier against cold. The earth itself admits the frost to a greater depth than snow does. At the same time, excepting when it chances sometimes to be covered with an impervious icy crust, snow admits air so freely that the leaves of plants retain perfect health under it for months, excepting always during the occasional occurrence of a crust. A tender child wrapped in fur or wool may be safely buried in a dry snow bank, and wandering trappers lie in it safe and comfortable while the fiercest Arctic winds are careering above triumphantly, driving or destroying every living thing that appears above the snow. Nothing survives but the resin-varnished Pines of those drear and awful solitudes, where there is not even the gushing of smoke from chimney tops, or the jingle of passing sleigh bells, or the shriek of the frozen snow crunched under the foot of a rapid passer-by, to indicate that there is life around.

So full of paradox and of compensation is wayward yet beneficent Nature, that after all what appears to an inexperienced

or unaccustomed eye most unendurable and unmanageable, often proves to be the most enjoyable if we apply experience and preparation to meet the case. It is only those who permit themselves to be driven by circumstances who suffer. Gardeners, more than most men, feel the reality of man's rule and lordship over all that lives upon the earth, and no one finds greater triumph in victories over the trials with which we are trained in this our school life of probation. The gardener yields only to the inexorable, no more. Under new skies, if he set himself to cultivating the subjects that are admitted to favour by the *genius loci*, he will contrive to find corners for many an old favourite of other climes, where it is safely hidden from Boreas and his crew, whose ways our gardener is not long in finding out, nor much longer in discovering how far they may be obviated, or flanked, or won upon by a masterly deference and compliance. Thus he will have with him, even under a sky of brass, some of his pels from among the little Daisies, Sweet Violets, gay Calceolarias, luscious Sweetwaters, Hamburgs, and Crown-Bobs, to brighten his own looks by the kindness of theirs, "So as doth the countenance of a friend."—PENNSYLVANIA.

GRAFTING STANDARD ROSES.

LAST year the season for budding Roses on the Briar for standards being excessively hot and dry, I hear from several of my Rose-growing friends that their efforts in that direction were, in many cases, unsuccessful, owing to the buds introduced being scorched up, and the difficulty of getting the bark to rise when the buds were ready. I therefore think it well to make known, or rather to call attention to a plan adopted here—that of grafting instead of budding for standard Roses on the Briar.

The Briar stock, is cut over perfectly horizontal, and then a wide cleft is made completely through the top, about one-quarter of an inch in width, and about 1 inch in depth. The scions, cut in the form of a wedge, are introduced, one on each side (see accompanying figure) if the stock is thick, or if it is thin one only inserted; the buds on the scions are turned outwards (I prefer two buds to each scion), and the scions are then tied in and clay patroned. They begin to grow almost directly, and soon fill up the space between them in the stock. When the shoots have made three or four eyes they should be stopped. The eyes then break, when stopping may be again resorted to if needful, and by the autumn the standard will have a good head, neatly and firmly fixed on the stock, and the Rose, if a Perpetual, will also produce some fine bloom.

One Rose was tried in this way during the hot weather of last June, and, instead of clay, moss was wrapped thickly round and kept moist. Late in the autumn it had a compact though small head, and I had the pleasure of gathering a couple of fair-sized Roses from it.

I find the advantages of grafting the Briar over budding to be these—the standards may be made all exactly of the same height; being grafted on the wedge principle the scions are not so likely to blow out as buds; they are more vigorous; they are neater in their appearance; they rapidly cover the top of the stock with their own wood, thereby preventing insects from eating downwards into the pith of the stock, as is often the case with those budded; and, finally, you obtain a well-formed and tolerably large head, which flowers the first year.

I do not bring this process forward as anything new, but only as a gentle reminder to those whose buds failed last year, that it is not too late to make their loss good by grafting, and that by this means they may obtain even better heads on their stocks by the autumn, than if their buds had taken successfully.

As regards myself, I mean in future to graft most of my standards, and shall shortly saw off the tops of some that are too tall, and rework them at a height corresponding more nearly with that of most of my others, and I have no doubt by the close of the year they will match well with many of those budded, and of older growth.

I may add that the growth and form of the heads can be better regulated if the plants be not allowed to bloom the first

year, and they will well repay the self-denial.—HARRISON WEIR, Weirleigh, Breckley, Kent.

GARDENING IN TOWNS.

I wish it to be understood that my notes on town gardening are confined to places within a mile of the General Post-office, for by adding another mile to the radius it would touch the Parks, where vegetation is far better, many plants that will grow and flourish there scarcely existing in the City. I simply wish to give my experience of what can with perseverance be grown and made ornamental in crowded and close localities.

Grass plots are very pleasing features where there is room for them. To form one, in February fork up the soil about 3 inches deep, and level the surface; then procure some of Pacey's Rye Grass mixed with a little Poa annuus. This mixture should be sown moderately thickly and trodden in, a slight covering of finely-sifted mould put on, and a wooden rake passed over the surface. When dry roll once. The grass will be up in three weeks, and if properly rolled and mown will continue green till October, but it will always die in winter if the place is very confined. Where there is more air and the site is open, as in Finsbury Square, the Temple Gardens, the Tower, and similar places, the grass remains green all winter, but much attention is necessary in watching the bare places and sowing them with a mixture of the Rye Grass and annual Poa.

It is useless to try the fine lawn grasses in large towns; I have tried a great number of different Poas, but have never succeeded. Returning is of no use, as the turf dies off in winter, but if small pieces of grass can be pulled up from the borders and planted, they will be sure to survive and succeed well. I am promised a fine collection of Poas with the names; to these I shall give a fair trial by sowing them on the Thames Embankment, and if I succeed I will state their names.

I find that late mowing is not advisable when a sharp winter sets in. Town grass suffers very much from frost and snow; but if it is kept long, the herbage is a good protection to the roots. Seed sown in February has a better chance of vegetating than that sown when the March winds set in, as they dry the surface, and the seed remains dormant till rain falls. The sparrows, too, are very destructive by eating the seed, which must, therefore, be sown thickly.—SAMUEL BROOME, Temple Gardens.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Those who have fully attended to former directions respecting the manuring, trenching, and pulverisation of the soil, will now reap the benefit of their past labour; they will have a greater depth of soil in proper condition for nourishing the roots of plants, at the same time the ground may be worked with much greater ease. This has been, and still is, a most extraordinary season, and in the event of our being visited with a sharp frost either this or next month the result will be calamitous. Sowings may now be made of all vegetables of the Cabbage tribe; also of Basil, Marjoram, and Summer Savory on a slight hotbed, or in boxes to be placed in heat, and transplant in May to a piece of well-prepared soil with a south aspect. Beet, sow a small quantity for an early crop. Broccoli, when the weather permits, sow Snow's Early sort for autumn use. Cauliflowers, wait till the weather becomes more mild before putting those out that have been wintered under glass, but in the meantime harden them well by giving all the air possible without damaging them by direct exposure to frost. Celery, look after the forward seed bed. Seedlings in boxes will soon want pricking-out. The old plan is very good—namely, putting some very rotten and mellow dung on a sound bottom, and the plants being pricked out 3 inches apart will produce many fibres, and may be removed with the trowel in balls with a very trifling check. Onions, sow the principal crop without delay. Make also sowings of Carrots and Parsnips. Peas, follow up the sowings of these, as also of Broad Beans. Parsley, sow a little. Potatoes, plant the main crop. Turnips, sow the Early Six-weeks sort. Lettuces, Radishes, and similar vegetables in season but a short time, should be sown fortnightly on light soils. Sea-kale, sow seed; the beds for this should be deeply trenched, and have plenty of rich manure and ashes, in which the plant delights. New Zealand Spinach, sow in gentle heat, and afterwards prick out and transplant.

FRUIT GARDEN.

The season for disbudding fruit trees is fast approaching.

The importance of this operation is generally acknowledged, and upon its proper performance mainly depends the production of a desirable quantity of clean, healthy wood of a suitable kind. Take, for instance, a single branch of a Peach tree when it first starts in the spring; if in a healthy, fruit-bearing condition it will throw out, probably, fifty wood shoots, and, perhaps, a greater number of blossoms, and if the whole of these were left it is probable that two or three of the leading shoots would draw all the nourishment to themselves, and become rank and over-luxuriant, whilst the remainder would be weak and worthless; in like manner the fruit would be small, ill-flavoured, and a great portion abortive. Hence the necessity of a systematic course of disbudbing, by which I mean the removal of every shoot that is not required; and if this system of disbudbing be rightly carried out over the whole of the tree, it will induce that proper equilibrium of sap by which the trees are prevented from growing into over-luxuriant wood. Every tree in a good soil is capable of producing and bringing to perfection that quantity of wood and number of fruit which are proportional to its age and the healthy condition of its roots; consequently, if by carefully thinning the fruit and removing superfluous shoots the fluid is directed to all parts of the tree at nearly equal distances, the result will be that each shoot will have the power of drawing to itself that amount of sap which is necessary to its healthy support.

FLOWER GARDEN.

Those who grow Neapolitan Violets should in the next three or four weeks propagate a stock either by means of cuttings or runners. Young stock of choice Pansies struck last autumn should now be planted in the flower-garden beds or borders. If the soil is in any way exhausted, a little fresh material should be put in every hole—such as old rotten loamy turf, mixed with old leaf soil, a little soot, and a little coarse sand. Too much manure may enlarge the blooms for awhile, but it soon makes the plant over-luxuriant. Sow Sweet Peas and Mignonette. Ranunculuses are now beginning to make their appearance above ground; as they advance it will be a necessary precaution to keep the soil well round the crown of the plant; when this is neglected the bloom is sure to suffer, though, if the surface of the bed is composed of sand to the depth of half an inch, there will not be much danger.

GREENHOUSE AND CONSERVATORY.

Now that the new growth has commenced, abundance of air and light should accompany it, if short-jointed and healthy wood and foliage are to be obtained. Careful management is necessary in order to allow sufficient air to greenhouse plants with the keen, piercing winds we are now experiencing, for with a bright sun air must be supplied in considerable quantities. Very thin gauze or hexagonal netting will be found an excellent material to place before the openings for ventilation, to break the force of the currents of cold air, which would be uneasy to come in contact with the newly-made foliage of plants. Herdwooded plants with their pots full of roots, and which it is not convenient to repot at present, should be carefully attended to with water. The early-started Chinese Azaleas and the common and Otahetan Orange will be making growth, which should be encouraged by frequent syringing and a genial temperature of about 50° by night. Straggling shoots should be removed, and to obtain perfect flowering specimens the new growth should be uniform. Some of the earliest-bloomed Camellias may be added, and occupy a shady part of the house. Epacris are another useful family for winter-flowering, and will stand moderate forcing. Select the early-blooming section, and after pruning place them in a moderately warm temperature, and by damping frequently encourage them to break. To the above may be added various plants, which, if required to bloom at Christmas, should be encouraged to make an early growth preparatory to an early ripening and rest. I prefer potting such of the above as require shifting, after the growth has become somewhat matured. Prune in *Erica hyemalis* and other winter-blooming Heaths as they go out of flower, to be in order for potting. In mixed greenhouses a place should be found for free-blooming Hybrid Perpetual Roses; cuttings of those struck last season and wintered in store pots, if potted-off immediately and subjected to high cultivation, will make neat bushes for next autumn and the ensuing spring. They should be forwarded in-doors for a month or so until established in 5-inch pots, when they may receive a final shift. Pinch off all bloom buds during the summer, and keep the plants free from green fly or other insects. Outings of young wood struck now may be induced to flower late this autumn, but, as a

rule, it is best for them to be older before they are allowed to blossom.

PITS AND FRAMES.

Continue potting-off stock for out-door decoration, also making cuttings of Verbenas, Fuchsias, Patanias, Dahlias, Pelargoniums, &c. Shade newly-potted Stocks, and remember that in making cuttings the least should not be first allowed to flag, and then an attempt made to restore it by abundance of water; foliage should never be allowed to droop.—W. KEENE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The week was very suitable for proceeding with work which with us was rather far behind. Earthed-up Cabbages; transplanted Cauliflowers, sowed Cauliflower seed in a little heat, and lifted some mere Sea-kale and Rhubarb. We placed pots stuffed with hay over Sea-kale out of doors, and some boxes reversed on Rhubarb now advancing, but likely to suffer from the harsh March winds.

We potted strong Cucumber plants into 6 and 8-inch pots, as thus we obtain strong plants, and can keep a considerable number in a two-light box until pits and frames are ready for them, for every inch of glass is now important. Though we have raised numbers of fine Cucumber plants with hot water, and even common heat here, yet when convenient we prefer for this purpose a dung bed and frame. A few plants in the warmest end of a pit heated by hot water are still bearing some fruit, and as soon as we have all the cuttings moved, we shall fill eight lights with strong plants at once, and put some in hotbeds under frames about the same time. In fine sunny weather there will not be much difference between them; but if we have a dull cold spring those assisted with the hot water will come in first.

Cleaned the Mushroom beds in bearing with a soft hair brush, as no spawn should ever be allowed to run on the surface. Watered some parts where rather dry with strong liquid manure, made from dried cow dung and sheep dung steeped for several days in water, as that seems to answer better than the liquid from fresher manure. Spawned a fresh piece, and laid earth on loosely until we see how the heat will be.

Prepared for planting a fresh piece of Globe Artichokes and Jerusalem Artichokes; raked the rough material off Asparagus rows; scattered a little salt, and saw that the crowns of those plants in ridged rows were sufficiently covered, as we found that the rains had washed them so as to leave many almost exposed, which would have rendered them liable to be injured by frost. We fear that plantations made last season will want making-up, as many were dried up by the powerful sun when we had not a drop of water to give to them. Turned over ground intended for tuberous roots, and, after fresh turning a piece intended for Onions, reluctantly let it alone, to see what the beginning of the week would do, as the ground was still too claggy to tread and work kindly.

On examining the Celery found that the latest was showing some signs of bolting, we had, therefore, the most of it taken up with balls and placed close together in a bed on a north border, and well banked-up with dry earth and cinder ashes, and a piece of wire-netting put round it to keep some four-footed intruders at bay. The ground occupied with the Celery was trenched and cross-ridged, so that the fine rotted manure from the beds could be equally distributed, and when well pulverised what is not wanted for a second sowing of Onions will come in well for Cauliflowers, Beans, &c. Cleared-off a piece of late-sown Turnips, placing the tubers in small heaps in a cool place, as the tops were beginning to run, and after that if left alone the Turnips soon become hard and stringy. When much is to be made of a small piece of ground, it should never be forgotten that flower-stems are the best of all exhausters.

FRUIT DEPARTMENT.

We lately stated that some fine Gooseberry bushes had died, and as at this time last year nothing could have looked more healthy, we can assign no cause, except that from which all life suffers, accelerated by the drought of last summer and carrying very heavy crops. Since the cold north winds set in, birds have commenced on the expanded buds and their tiny leaflets, and to keep them away we syringed with soot and lime water, the latter rather thin. We have been obliged to do so with Pears, and as the buds are growing through we must do it again. It almost makes one a little envious on going into large gardens and nurseries close to towns, to see

whole quarters of trees untouched, whilst here if we manage to save a share of our buds we are more than contented. On some beautiful dwarf Cherries with all our care, and even resorting to netting, the flower buds are so stripped that there will scarcely be enough for a crop. As yet we have never been troubled in this respect under glass. Apples were untouched until to-day, when we noticed some hundreds of buds of the Red Quarenden shelled out and the remains on the ground. As yet we find that a wash on the trees, as a deterrent in this respect, depends very much for its efficacy on the whiteness. The lime-wash can be of very little use in other respects, as though used when tolerably fresh it will soon, from exposure, become as mild as chalk, and in that we should think there could be little offensive to the bill of a bird. When we used cow dung, soot, &c., more liberally, things not very pleasant we should say, we do not think the wash was so effectual as when more lime was used. There may, therefore, be something in colour as a deterrent. Whether there be anything in red lead as a colour we are not certain, but though during the week we have noticed half a dozen pheasants close to and on the piece of ground appropriated, as stated last week, to Beans and Peas, not a seed has yet been taken, though there has been scratching in the neighbourhood. They have not yet scratched so as to find out the colour, but there may be some instinct in the very smell from the lead that tells them to beware. We have previously had the seeds turned up and left, and are rather surprised the turning-up has been delayed. As soon as symptoms of that appear, we will not to keep all large intruders out.

Apricots, though we have not been able to nail them, opened their blossoms so fully that, having nothing better at hand, we covered them thinly with spruce twigs. Unfortunately some wooden copings, which form an excellent protection when well secured, were smashed in a terrific gale.

Orchard Houses.—We were fortunate in having the roofs of these, as respects puttying, secured in the beginning of the winter, and therefore as yet, even in very high winds, we have not had a square touched. We hear accounts of disasters from the wind where large squares had been used, and the puttying had become loose, or had gone. This is one disadvantage of using large squares in these cheaply-constructed houses, for if the wind once finds it way in owing to a few squares slipping out, there is no calculating how many may be made the sport of the tempest. Setting the squares in grooves would, in this respect, be a great advantage, counterbalanced to a certain extent by the greater difficulty in having a broken square fully removed. When large squares are used, and puttied in the ordinary way, it would be well to have a small brad or sprig at the sides in the centre of each square, as well as at the lower corners of each, to prevent lifting as well as sliding. The great security, however, will ever be keeping the roofs always in thorough order. Considerable observation and experience enable us to say that the let-alone policy, as respects glass houses, is anything but economical, and that the cheapest and the best plan would be to do glazing whenever it was required, and after painting properly at first, to give a coat of paint every year. The houses would then always look well, and would rarely require much work to be done at any one time. So far as to common roofs. We believe the day will come when we shall have glass roofs on a uniform plane without laps, and when putty, if not painting, will be altogether dispensed with.

In our earliest orchard house, Peaches, &c., are nearly in full bloom, and the buds of those in the second are swelling and opening, notwithstanding all our retarding. The first house could not be so much exposed, owing to having the ground pretty well filled with Pelargoniums, &c., all the winter, which we could have covered with soft litter in severe weather. Both houses have a row of Peas coming on in front. In the latest house there are Lettuces, planted small in the beginning of winter, and growing fast, but they will not be in much before older plants out of doors. But for the mildness of the winter these Lettuces would have been more thought of. Introduced a row of Tom Thumb Peas in pots to the back of the first orchard house, removing them from a similar place in the Peach house, where they would have been apt to be drawn with more heat and shade.

In these houses we were scarcely troubled with insects last season, but, as measures of precaution, the trees were several times syringed during the winter with hot water, as hot as could be well applied, say 20° or 30° below the boiling point, but of course colder than that before it got from the syringe to the wood of the trees. We lately stated how the trees in pots were top-dressed, and fitted with a rim of thin turf doubled,

the earthy side outwards, so as to kill the grass of the turf by keeping it from the air. As another measure of precaution, we have just cleaned the floor of one house, scraping off all the surface soil, getting loose on the top, for about half an inch in depth. As the roots from the trees on the back wall run through the soil on which the pots stand, this moving away of the surface not only is a security against harbouring insects, but it enables us to see thoroughly the state of the soil as respects moisture, and to water only that which is dry. We then just broke the surface with the points of a fork, say about a quarter of an inch in depth, and not more for two reasons—first, because roots are quite close to the surface; and secondly, because roots of Peaches, and we believe most fruit trees, do better in firm than in loose soil. We then covered over with a thin layer of fine rotten manure, mixed with a little lime and soot, and then, chiefly to secure neatness, finished with a sprinkling of fine-riddled loam. This fresh, rather open surface, besides looking neat, enables us to water when necessary more regularly, as the water has more time to percolate easily down to the roots, instead of running off, and sinking in the openest places.

Where the surface is hard, as well as the bulk of the soil, the surface must be kept regularly damper than suits the fruit as it approaches ripening, and especially if the weather should be dull. Even in the open fields, if we can judge from our experience in forest-tree planting, up to this time the quantity of water that has fallen in rains has not made up to the land for the drought of last summer, where that land was at all hard on the surface, as then the rain ran off along the surface instead of descending, as it would have done if the surface had been loose and open. In making holes for trees in ground covered with rough herbage we found the ground, notwithstanding the rains, so dry, that if the trees had been larger we must in common prudence have followed with the watercart. However much there may be in firm soil for Peaches, keeping the surface a little open prevents it from cracking, and allows waterings to penetrate to the roots more regularly.

If any of our amateur readers have allowed their orchard-house trees to become too dry it would be bad policy to soak the soil all at once, and most likely cause the buds to drop as much as they would do from overdryness. If in pots, give, say, a pint round the outside, and follow with another in a few days, and then in a week or so give a little to the centre of the ball of the plant. If well established trees are growing against the wall of a lean-to, and the bulk of the soil, being protected from rains, has become rather dry, water the ground with water from which the chill has been taken off for about 18 inches in width, and in four or five days follow with another similar width, and so on until all the border is moistened. Similar care is not required afterwards; but it is often better and more convenient to water only the half, or so, of the width of a border at a time.

ORNAMENTAL DEPARTMENT.

Forest Trees, Covers, &c.—Almost finished planting for these purposes, and feel sanguine that with an ordinary summer the trees will succeed well, and present a great contrast to what was too generally the case last season. Besides the suitability of the weather, we have also great hopes from the fact that the trees will be less or more protected from four-footed depredators. Where hares and rabbits are numerous, it is a waste of labour and of money to plant young trees without protection. We have gone through acres, and have scarcely found a tree unbarked. One of two things is essential to success—either such visitors must be brought down and kept down, or they must be prevented from attacking the trees. For the latter purpose nothing is so good and economical in the end as galvanised wire netting. That 24 inches in height will be some security against rabbits if well put up, but less than 3 feet in height is no security against hares. We used to think that a good way of fixing this netting to prevent burrowing was to sink the netting in the ground 2 or 3 inches or so; but a gentleman who is thoroughly conversant with such matters has proved to demonstration that there is a much better way. The web of wire is unrolled along the ground where it is to stand, and pulled rather tightly to prevent any puckering. A foot then presses the side of the web that is to be next the ground, and a light wooden mallet follows so as to make it level, and the netting is pegged to the ground with wooden pegs, the peg not coming against the outside of the web, but at the second or third crossing of the holes, so that there shall be at least 2 or 3 inches of the netting level on the ground outside of the pegs. From 3 to 4 feet is a good distance for the pegs. Then,

beginning at one end, the netting is raised upright from the pegs, stretching it regularly, and is fastened by the top to a slight stake by driving a small nail, and then beuding it to the stake so as to keep the wire firm. By this plan there is a great security gained by what seems at first the loss of the 2 or 3 inches of netting laid flat on the ground. At first, when the wire is seen, the rabbit will let it alone; he will rarely think of going farther back and beginning to burrow. When enough of grass grows over it to conceal it, it acts better still; for if the rabbit attempts to burrow, then he comes quite up to the fence, and, getting through the grass, he comes in contact with the wire, and retreats, feeling discomfited. Simple as the method appears, we have seen no other plan to equal it, and it was one we should never have thought about, as we had less studied the habits of the animals.

For keeping the netting upright the little stakes should not be further apart than 9 feet, but even at that distance, and especially when much farther apart, the netting in time will be apt to bulge and to droop—that is, its own weight in the latter case will lengthen the holes of the netting longitudinally, and lessen their width vertically. This can be easily remedied by walking along the side of the fence, placing one foot lengthwise on the pegged-down part, and raising the netting with the hands at the same time, when it will be as firm and straight as when first fixed.

These details may be useful to some amateurs and cottage gardeners who have invested in wire netting, and yet find that rabbits are as troublesome as ever. For small numbers of trees smearing the stems and lower branches with a rather thick mixture of lime, soot, and cow dung will deter the vermin for a time, and do no harm to the trees. In cottage gardens where the fences are bad, one of the cheapest securities would be to stuff every opening with Thorns or other brushwood and then sprinkle all the bottom with coal tar. So long as that retains its scent hardly a four-footed depredator will care to pass it.

Early-blooming Camellias and Azaleas if now moved to a forcing house will make their wood and flower buds early, and will come into bloom early next winter; the first with no, and the second with little, forcing. Shrubs forced, if kept under protection when done flowering, will also be inclined to flower early naturally the following season. In a few days we shall take Camellias exhausted of flowers to a vinery.

Bedding Plants.—In most places where results must be attained with economy, scarcity of pots is now general. Calceolarias may be transplanted where they will stand before being removed to the flower beds, and will be better without pots. Many fibrous-rooted plants will do well treated in the same way. Scarlet Pelargoniums succeed well when so treated, though apt to lose a few leaves on being first planted out in the open air. Still there is a prejudice in favour of having a ball of roots to plant with, and various makeshifts in lieu of pots have been adopted, as taking some earth with the roots, and wrapping the ball in moss, &c. Where it can be had, we have found nothing better than fibrous turf, such as may be obtained from the sides of many a highway.

Being scarce of room, and having just a slight heat in the covering of a Vine border, we made a temporary bed by placing the bole of a tree back and front, on which to rest some old sashes, mat frames, &c., and have there put out some thousands of Pelargoniums in turf. The turf, the fuller of fibre the better, is obtained about 2 inches in thickness; if a little more all the better. Placed on a table with the grass side downwards, it is then cut with a wood-bill into pieces about 3 inches square. With a sharp knife, a round piece is scooped out of the centre, going down to within half an inch of the grass. The young plants are then taken from the cutting-boxes, the roots put in the opening along with sandy loam and leaf mould, and placed on the bed, every row being watered with water at about 90°, so as to give some heat to the turf, and after watering some leaf mould is strewn along each row of these little turf pieces. Where little or no artificial heat is given, these plants will want scarcely any attention until planting time, except air-giving, and then every piece of turf will have fine roots, like a wig, bristling all round it, and the plants in such pieces move and plant well. When, for encouraging quick growth, anything like bottom heat from a hotbed is given, the pieces of turf should be moved as soon as filled with roots, and set on a cool bottom with a little protection at first, as otherwise the roots would so run into the material of the hotbed as to cause the plants to feel the removal when finally transplanted. The plan is also a first-rate one for those who fancy taking up and keeping their bedding plants, as the turf bits

will mostly keep their consistence during the summer, and make the centre of a fine mass of fibres. Of course, the turf is planted along with the roots. When the pieces are thus placed closely together there is little trouble with the grass; in fact, we rarely see a blade. It soon dies when shut out from light and air.—R. F.

COVENT GARDEN MARKET.—MARCH 10.

A SLIGHT improvement may be noticed in the general demand, but not sufficient to warrant any higher quotations, the imports of foreign goods and the home supply being quite equal to the demands both of the London trade and the northern markets. Large stocks of old Potatoes remain on hand, and the trade is dull.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples ½ sieve	1	6	to	2	0	Melons.....each	2	0	to 5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges100	2	0	0	0	0
Chestnuts.....bush.	10	0	16	0	Peachesdoz.	0	0	0	0	0
Currants ½ sieve	6	0	0	0	Pears (dessert) doz.	4	0	12	0	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	10	0	0
Figs.....doz.	0	0	0	0	Plums ½ sieve	0	0	0	0	0
Filbertslb.	0	0	0	0	Quinces.....doz.	0	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0	0
Gooseberries .. quart	0	0	0	0	Strawberries.....doz.	3	0	0	0	0
Grapes,Hothouse..lb.	8	0	12	0	Walnuts.....bush.	10	0	16	0	0
Lemons.....100	4	0	8	0	do.100	1	0	2	6	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes..... doz.	3	0	to	6	0	0	4	to	6	0
Asparagus..... 100	5	0	8	0	Lettuce..... score	1	0	3	0	0
Beans, Kidney .. bd.	1	0	2	0	Mushrooms.... pottle	1	0	1	6	0
Beet, Red..... doz.	2	0	3	0	Must.& Cress, punnet	0	2	0	3	0
Broccoli..... bundle	1	0	2	0	Onions..... bushel	8	0	10	0	0
Brus. Sprouts ½ sieve	3	0	3	6	Parsley..... sieve	3	0	4	0	0
Cabbage..... doz.	1	0	2	0	Parsnips..... doz.	0	9	1	0	0
Capsicums..... 100	0	0	0	0	Peas..... quart	10	0	0	0	0
Carrots..... bunch	0	6	0	10	Potatoes..... bushel	4	6	6	0	0
Caulliflower..... doz.	1	6	4	0	" Kidney..... do.	4	0	7	0	0
Celery..... bundle	1	6	2	0	Radishes doz.bunches	1	6	0	0	0
Cucumbers..... each	1	0	2	0	Rhubarb..... bundle	0	6	1	0	0
Endive..... doz.	2	0	0	0	Sea-kale..... basket	2	0	3	0	0
Fennel..... bunch	0	3	0	0	Shallots..... lb.	0	8	0	6	0
Garlic..... lb.	0	8	0	0	Spinach..... bushel	2	0	3	0	0
Herbs..... bunch	0	3	0	0	Tomatoes..... doz.	1	0	2	0	0
Herseradish.. bundle	3	0	5	0	Tornips..... bunch	0	4	0	6	0

TRADE CATALOGUES RECEIVED.

J. Carter & Co., 237 and 238, High Holborn, London, W.C.—*Carter's Farmers' Calendar and Descriptive Catalogue of Farm Seeds, 1869.*

Dick Radclyffe & Co., 129, High Holborn, London, W.C.—*Catalogue of Vegetable, Agricultural, and Flower Seeds.*

TO CORRESPONDENTS.

* * * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.E.—Many questions must remain unanswered until next week.

PERSIAN ASPARAGUS (Q. Q.).—We consider the advertisement attempts an imposition. It is certainly not an Asparagus. Of the true Asparagus there are but two varieties, the purple and the green-topped, either of which may be made to produce "gigantic" shoots by high cultivation. The application of strong liquid manure effects this the most readily. We cannot give an opinion whether lime would much benefit your garden, as we do not know the character of the soil. Probably bone-dust would be more beneficial.

POTATOES ON WET SOIL (W. H. W.).—Cocoa-nut fibre refuse is better than spent tanners' bark for surrounding the sets in a wetish soil. If you plant by the dibble, half a handful below the set and half a handful above it will be sufficient. We should fork such a soil into ridges and plant the Potatoes on them.

SEEDLING CINERARIA (R. Trevithick).—Your purple and white Cineraria is a very superior flower, and if, as you say, the habit of the plant is strong and good, it is worth propagating.

SOWING ACUBA BERRIES (H. D.).—Now is a good time for sowing the berries, but no one can tell whether the seedlings will be male or female,

or some of each sex. The berries should not be dried, but sown at once in a compost of two-thirds loam and one-third leaf mould. They may be placed in a mild hotbed, but will succeed in a greenhouse. When the seedlings appear, and have grown a little, the male plants may be distinguished from the female, but only by those conversant with them. You will have to wait until they are of a size fit for flowering and producing berries, as you will be able to distinguish the male from the female plants. The berry-bearing plants are, of course, the female plants. If placed near them, the male will fertilise the female naturally, but to make sure it is well to do so artificially. With good treatment the plants will produce berries the second year, but they vary considerably in this respect. They generally have berries by the third year.

ORNAMENTAL BERT (J. P.).—Most likely the present season will bring out new varieties. We have seen a good variety of Nutting's Dwarf Dark that looked very well. Dell's Crusion is also good, perhaps of more upright growth than the preceding. Dickson's Improved Black-leaved is also said to be good. The requirements of the flower garden will probably cause further improvement in this plant, but you may rely on those named, when true, being all highly ornamental. We recommend you to sow the seed in fine sandy soil in the middle of April, and to transplant in moist weather in May.

CUTTINGS OF SEA-KALE (Idem).—The crowns of all plants put in now, may, under favourable circumstances, furnish tolerably good heads next year, but it will be better to allow them one year longer. Any quantity of plants can be obtained by cutting the roots into lengths of about 2 inches each, and planting them not too deeply in a bed of fine soil, from which they can be removed when wanted. Many growers cut off the whole head of the plant every year after they have forced, in order to form a more compact crown or cluster of heads, but unless the plants are in a healthy vigorous state they occasionally succumb when thus treated.

MELON MARROW (Idem).—We think that the sort you speak of is a variety of the old, long, Vegetable Marrow, which some years ago was thought to be superseded by the Custard Marrow, but the latter was found no improvement. We expect that as a Marrow it will be most relished when gathered young and cooked in the usual way. During the last summer Vegetable Marrows were one of the most useful vegetables we had, and flourished better than most other tenants of the kitchen garden.

PLANTING POTATOES CLOSE TO A WALL (Idem).—This may be done with a good chance of success, provided they do not interfere with the trees and other things planted there. Usually Dwarf Kidney Beans are planted in such a position when any portion of a south wall is at liberty, and they come into bearing before those planted in the open ground. Potatoes are also earlier; but do not risk the well-being of Peach and other trees for this crop, unless you have special reasons.

INSECT ON VINE (S. Missing).—It is not the Vine Weevil, but one nearly allied to it, *Cercosia picipes*. The warfare you have adopted is the only mode of overcoming it—hand-picking at night. If a sheet is spread at night beneath the Vine, and the rods are shaken, many of the Weevils may be at once secured.

HARDY RHODODENDRONS (Saul).—The following are six splendid varieties—viz., Mrs. John Clutton, white; Atroroseum, dark scarlet; Joseph Whitworth, purple lake; Lady Elcanor Cathcart, salmon rose; John Waterer, crimson; and Delicatissimum, white, tinged with pink. Michael Waterer, a new variety, is also a splendid crimson; and if you wish for more variety you would do well to add some of the blue, blush, and rose-coloured sorts.

ACUTRA JAPONICA (Subscriber).—It is curious that a communication in our Journal to-day has answered anticipatorily all your queries.

POINSETTIA FOR TABLE DECORATION (Idem).—We presume that your plants are old, and on that account, from the close pruning necessary, they grow tall and straggling. You should have young plants from cuttings or eyes of the ripened wood of last year put in early this year. The plants should be kept in comparatively small pots and near the glass, allowing the least possible distance from it for growing, and admitting air freely so as to have them dwarf and compact, stopping the shoots, but not after May. Six-inch pots are large enough for plants in the first or second year. If larger plants are wanted, the shoots may be tied down and formed into a sort of globe not exceeding 1 foot in height, which is, perhaps, the only plan of keeping old plants dwarf.

JUDAS TREE PROPAGATION (L. B.).—It is increased by seed sown in a gentle hotbed in spring, and when the seedlings are strong enough they should be hardened off, and pricked-out in a sheltered situation. The varieties are increased by grafting on the common Judas Tree (*Cercis siliquastrum*) in March, when the sap is beginning to rise in the stocks.

GROWING GLOXINIAS FOR GREENHOUSE (J. H. H.).—You may, with the assistance of a hotbed, grow these plants for greenhouse decoration. They should be placed in the hotbed not later than the beginning of April, better during this month, be continued there until the close of May or beginning of June, and then be placed in the lightest and warmest part of the house, keeping the sashes on that part closer than those elsewhere. The plants should be well supplied with water when in active growth and in full foliage. When coming into flower a slight shade from powerful sun is desirable.

GYMNOGRAMMA LAUCHEANA AND PERUVIANA ARGENTOPHYLLA FOR GREENHOUSE (Idem).—These cannot be grown except in a stove, and to grow them well they require more heat than most Ferns. They would not succeed in a sitting-room under a bell-glass, or in a greenhouse.

PAINTING GREENHOUSE (Idem).—We have no experience of white oxide of zinc paint, and cannot say whether it would or would not injure the plants. You may, however, paint the house with white-lead paint without injury to the plants, if you give a little air at night and do not use spirits of turpentine for mixing the paint, but the prepared driers, which answer quite as well as turpentine; only the latter, when all the plants are taken out of the house, is destructive to mealy bug and scale if the house is shut up closely.

LYCOPODIUMS FOR GREENHOUSE (Idem).—The kinds named are cultivatable in a greenhouse if afforded a warm and rather close moist position, with shade from bright sun. *Selaginella Willdenovii* is a fine Lycopod suitable for greenhouse culture.

PLUCKY TREE BARE OF BRANCHES (T. N.).—Your tree we would presume

well to, and cut off the long central branch at its base, depending on the lower branches for shoots to train in its place. They would, no doubt, produce shoots plentifully if the vigor of the tree were thrown into them, by stopping closely in summer the shoots on the upper part, and allowing those on the weak parts to grow. We do not see the object of ringing the central branch, unless it be to produce shoots lower down, which we fear it will fail to do.

SEA-KALE PLANTING (An Old Subscriber).—We presume your soil is not wet; if it is so, that will account for the plants being planted as on hillocks, which is a good practice on wet soils, and if yours is so we would not alter them. If it is rather dry, no water lodging in the subsoil, fill in the spaces between the rows with rich sandy soil, and nearly level with the crowns. The ashes, if placed in ridges between the rows of plants in summer, will be out of the way, but better remove them altogether when cleared off the plants.

PRUNING ORANGE TREES (Idem).—Now is the proper time to prune Orange trees, thinning out the weak, useless, and dead wood, and shortening straggling shoots.

POTATOES FOR WORKING MAN'S GARDEN (A Working Man).—Perhaps you do not care for many of the very early Potatoes, but you will need some. Myatt's Prolific and Rivers's Royal Ashleaf are excellent for a first crop; Lapstone for second early, Milky White, and Dalmahoy, all of which would be off in time for Savoy and Broccoli, and the Celery may follow the Early Ashleaf. The seeds of the Celery should be sown at once, immediately under the wall, and at the driest part, covering in frosty nights with any old canvas or other material that can be had. When large enough to handle the plants should be pricked-off into the dampest part of the border, and the ground should be rich. Manchester Red Solid Celery will suit you. A good white is incomparable Dwarf White. You may sow the others in any part of the border except the wet part, and at the end of the present month or beginning of April. Drum-Head Savoy, Dwarf Curled Broccoli, Elletson's Mammoth Broccoli, and Dilleck's Bride are good. The Leeks should be sown at once. Musselburgh Leek is a fine sort.

BEONIA LEAVES DYING (R. H.).—Your plants have too much moisture, and are exposed too much to the air and cold. Place them in a slightly shaded position near the glass, and keep them moist by frequently sprinkling with water the paths or floor, wall, and other surfaces, but avoid wetting the foliage, and admit air in moderate quantities. The plants should have a good supply of water, and a brisk heat of 65° at night, and of from 70° to 75° by day, with a rise from sun heat to 85° or 85°.

GESNERA REFLORENS (Idem).—Its proper time of rest is after it has flowered, keeping it dry for at least six weeks, or longer, starting it again in March—that is, presuming it to have flowered in autumn, but if it flowered later, then the time of starting must be later in proportion. Six months will be required from starting to the time the plants bloom.

BOEGANVILLEA NOT FLOWERING (Idem).—Your plant has not the wood sufficiently ripened. Secure a good growth, expose it fully to light in a dry good heat, and keep the plant dry at the root, and to such an extent as to cause the foliage to flag, and keep it dry when not growing.

MEYENIA ERRECTA CULTURE (Idem).—These plants root like all others, and lose all or most of the leaves. They should be kept rather dry in winter, and should now be pruned well in. When the plants have shoots 2 or 3 inches long, they ought to be fresh potted, and encouraged with an increase of heat and moist atmosphere. Any straggling shoots should be shortened, and a light rather airy position afforded. The wood should be well ripened.

GOLDEN YEW GRAFTING ON IRISH YEW (A Subscriber).—The grafting is performed in the usual way, but that mode known as side grafting is to be preferred. The head of the stock should not be entirely removed until the crafts have taken, though they may be cut off to within a few inches of the point of union in order to throw the sap into the graft. It should be done when the buds on the stock are beginning to grow, and are slightly advanced.

PLANTS FOR PILLARS OF ORANGERY (North-east Norfolk).—*Hibbertia volubilis*, *Kennedia inophylla floribunda*, *K. Marryatiae*, *Mimosa prostrata*, *Luculia gratissima*, *Platanus expansa*, *Rhynchospermum jasminoides*, and *Sollya linearis*.

CLIVELDEN BLUE PANAX (Idem).—This, if sown now, would flower in autumn, but not very freely, though the plants would be fine for next year's spring display. Two parts of fibrous loam, one part of turfy sandy peat, and one part of leaf mould, with a free admixture of sharp sand, and good drainage will grow *Tasocia Van-Volxemi* well.

MULCHING FRUIT TREES (Amateur).—The littery portion of the manure should be removed now, and the small left, pointing it in neatly with a fork, but not going so deep as to injure the roots. The mulching should be repeated in May and July, but with short manure or rich compost only. From the Vine border the littery portion of the manure should be removed in May, and the short pointed-in, giving the border a good dressing of soot.

PLANTING INTERMEDIATE STOCKS (Lady Amateur).—They may be planted out next month; in the meantime harden them well off.

PLANTING LAYERS OF CARNATIONS AND MULE PINES (Idem).—This may be done now, but best next month, as the ground will then be in better order. The layers may now be detached from the parent plants, and planted out early next month. The Pansies should be planted out at once.

COMPOST FOR CINERARIAS, CALCEOLARIAS, AND PELARONIUMS (A Practical Amateur).—Two parts loam from rotted turves, one part peat, one part leaf mould or old rotten cow dung, with a free admixture of silver sand, will grow most greenhouse plants perfectly. You are wrongly informed as to the sand encouraging worms; but one-sixth of the whole is quite enough to add to any composition of soil, as most soils contain a large per-centage of silicious matter.

RASPBERRIES FROM CUTTINGS (Idem).—These may be raised from cuttings 10 or 12 inches long, inserted in the soil to one-half their length. October and November are the best months to plant them, but they may now be inserted, though it is best to do so before they have begun to grow.

CAMELLIAS UNHEALTHY (A Gentleman).—Your plants are in bad health. Something unfavourable to the action of the roots must be present in the tubs. Are they well drained, and is the compost suitable? Perhaps it

is too rich and tenacious, or in a saturated condition from bad drainage. There is nothing in the flower sent to account for the premature falling of the blooms, a result of imperfect root action. If the foliage flags, though water is given, the soil may be deficient in moisture, and sufficient may not be given to reach and moisten it in every part; or the plants may be almost entirely destitute of roots, and are existing on the stored-up sap. Without further particulars we cannot advise, but would suggest an examination of the soil and roots, paying particular attention to the drainage.

VINE BORDER (S).—We would advise you to use the clinkers chiefly for drainage above a concreted bottom, with drainage in front besides. You are quite right in making the border above the natural level. Of the two, have the inside border the higher. Good rich loam, such as can be had from a pasture, or the sides of many highways, will suit you best, and to ten loads of this we would add three of the lime rubbish, half a load of bruised boiled bones, and little of any other kind of manure.

PRUNING VINES (Vineyard, Dalky).—If you mean to obtain fruit from your fresh-planted Vines, shorten the 6-foot rods but little. If you wish the Vines to grow well and continue fruitful for years, then we would advise shortening them fully half their length.

REMOVABLE GROUND VINERY (A Wandering Subscriber).—We would under such circumstances make the ground vinery as simple as possible, with moveable ends, either of glass or wood. We would prefer the sides being of wood at least 2 inches wide, but 1 inch deep would do. We would make the sides separate for package, and connect them with screws, or bolts and nuts, at the ridge when in use; 9 feet long would be useful for moving. All the climbers you mention would do admirably, and so would *Jasminum nudiflorum*, which would be a sheet of yellow flowers in winter. You had better have the hardier *Loniceras* and *Clematises*.

VINEY—ASPARAGUS (J. C. L.).—In your circumstances you would keep the Vines back as much as possible until the season is more advanced. You have gathered Asparagus early (February 22nd). Most likely you will have less to gather at a later period. We cannot name plants from leaves only.

CUCUMBER AND MELON FRAMES (T. B. C.).—If you can command sufficient heat from your steam pipes there is nothing to prevent the plan answering, and stone would be better than wood for covering the chamber. Wood or stone laid across from brick wall to wall, would be rather too high, and scarcely leave enough of space for soil and air above it. You would require at least from 6 to 9 inches more, and that would bring it nearer to the steam pipes—another advantage for securing heat. In either case you must have means for letting the heat up by upright pipes, &c., communicating with the chamber. We have secured plenty of heat by a flooring of rough strong slabs, set rather open, and the openings filled with bricks laid roughly coated with lime. Much of your success will depend on the heat obtained by steam, and having that heat near enough to the floor of the chamber. As you say nothing as to how the heat is to be obtained, we cannot judge in that matter. Steam may be very hot in 1½-inch pipes, but it will require to be hot to give you bottom and top heat.

HEATING A GREENHOUSE (—).—What is called a cannon boiler will answer, 24 inches long, 18 inches wide, and 6 inches deep; but it is so little curved that a saddle-back would have answered better, or at least with less care in the management. After the fire is fairly lighted and burning at all brightly, the economy of heating will greatly depend on

the proper use of the damper. We would set such a shallow boiler on piers of firebrick 9 inches deep at each end, and a pier at each side in the middle, leaving two holes at the sides and one at the farther end, for the heat to play on all sides of the boiler. With a saddle-back one or two layers of firebrick at the sides would be sufficient, according to the depth and size of the boiler; and one opening at the farther end would do, so as to bring the heat along the sides and top before reaching the chimney. For such a small house the flat boiler will answer, but a saddle-back or a conical one would answer with less trouble with the damper. In such a boiler as yours, after the fire is lighted and becoming bright, something like an inch opening in the damper will do, and very little air must be admitted by the ashpit door after the fire is burning well. The boiler would do very well in the space marked at the end of the house. It will act all the better if you can sink it enough, so that the top of the boiler shall be from 18 to 24 inches below the level of the floor of the house to be heated. With the pathway along the front, and a doorway at each end, the simplest plan would be to have the pipes about 6 inches above the floor, beneath the front of the stage, and just behind the pathway. The best way to do this would be to connect the flow pipes from the top of the boiler with a socket joint, to receive three pipes, take these to the farther end on a level, and connect them there with a socket flange for receiving four pipes. The fourth pipe would be the outside, and go back to the bottom of the boiler. If you did not like the pipes in that position, and would prefer them to be placed under your shelf at the front of the house, in front of the pathway, you must take a flow and return from the boiler under the level of the pathway until you pass the doorway, and rising, you might connect three at each end in the mode referred to above, or bring the return underneath the three flows. The first plan would be simpler, even here, if there were room for four pipes abreast under the shelf. In either case an air pipe would have to be inserted in the socket at the farther end of the house, or there must be an open cistern above the level of the pipes.

EDWARDSIA MICROPHYLLA (W. O'B.).—It is *Edwardsia microphylla*. The specimen within 50 yards of the sea beach, near Dublin, which has been growing in the open air for the last ten years without any protection, and is now about 7 feet high and covered with bloom, we can readily imagine, both as regards foliage and flowers, is a very handsome shrub.

VINES (G. A. L.).—We cannot understand what you mean by growing Vines in cottages as an ornament.

SELECT CAMELLIAS (F. J. C., Sallerbridge).—Double White, Princess Baccchiotti, Contessa de Hainaut, Lavinia Maggi, Bicolor de la Reine, and Valtearedo.

SELECT AZALEAS (Idem).—Stella, Lizzie, Her Majesty, Flower of the Day, Madame Miellez, Sir C. Napier, Duchesse de Nassau, Etoile de Gand, President Clays, Arborea purpurea, Cheloni, Holfordi, Criterion, Louise Von Baden, President, and Extranei.

NAME OF FRUIT (J. Anderson).—Your Pear is Vicar of Winkfield.

NAMES OF PLANTS (J. S. B.).—*Gymnogramma ferruginea*. (*Inquirer*).

—*Sisyrinchium grandiflorum*. (*Lou. Harrogate*).—1, Golden Yew; 4, Thuja orientalis; 6, *Juniperus rigida*; 7, *Berberis Darwinii*; 5, *Erica medieterranea*. Nos. 2 and 7 are too small to be recognised by us. (*D. H.*).—1, *Edwardsia microphylla*; 2, *Forsythia viridissima*. (*J. P. Ware*).—The name of the fungus gathered under the Cedar tree is *Peziza lanuginosa*, a rare and highly interesting species, only recently known to be British. If you can send us two or three more specimens we shall be obliged.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 9th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 3	30.049	29.934	43	21	44	43	N.	.00	Fine and frosty; very fine; densely overcast.
Thurs... 4	30.181	30.089	41	26	43	43	N.W.	.00	Overcast; densely overcast; clear and fine.
Fri... 5	29.895	29.799	54	39	43	42	W.	.00	Fine, overcast; cloudy but fine; boisterous.
Sat... 6	30.233	30.075	47	21	41	42	N.E.	.00	Cloudy but fine; cold wind; clear and frosty.
Sun... 7	30.173	30.059	46	21	41	42	E.	.00	Fine and frosty; very fine and clear; overcast.
Mon... 8	29.8-4	29.616	41	24	42	42	S.W.	.00	Snowing; snow showers; overcast, fine.
Tues... 9	29.490	29.410	44	33	42	41	N.	.00	Foggy; overcast; very dark in afternoon; foggy.
Mean	29.979	29.853	45.14	26.43	42.71	42.14	—	0.00	

POULTRY, BEE, AND PIGEON CHRONICLE.

FANTAIL PIGEONS.

In a February number of "our Journal," page 118, I notice a few remarks on the Almond Fantail, and reference is made to the "Treatise on Pigeons" published in 1765, where one is mentioned which was bought by a nobleman. I think it well to mention I have had several, though not quite so rich in colour as I could have wished, owing to the difficulty at the period of getting a good deep yellow. Mr. Matthew Wicking, if I remember rightly, also bred some, and Mr. Cottle, of Cheltenham. To the latter gentleman I sent the last of my strain, the rats having killed the others, and I believe that he has some Almond Fantails, or an approach to them, at the present time.

I cannot say that I was pleased with the appearance of the birds, nor do I think there is any colour to equal, much less surpass, the White. I had some very beautifully coloured Blues which I imported from India, and of fine and delicate quality, but they soon died. Most of the Saddle-back varieties

I have seen come from Germany, and they have been coarse, and to my thinking exceedingly ugly. Some years ago there was a pair of Blacks shown at Birmingham, which as Blacks I have never seen equalled before nor since. In carriage and size they could hold their own against some of the best Whites. I should like to see a few Powdered Blues of the same colour as Mr. Wicking and myself produced in Owls many years ago. Perhaps some fancier will try to obtain it. A Fantail of this colour would be lovely if good in other respects, and would well repay the trouble taken to produce it.—HARRISON WEIR, Weirleigh, Brenchley, Kent.

THE PIGEONS OF VENICE.

Of all the sights of Venice none is more remarkable in its way than the Pigeons.

How it came to be a point of pride with the Venetians to defend these birds and to leave legacies to them, and afterwards, in a bewildered sort of way, to seek saintships for them in the local calendar are matters involved in mystery. But thus much is known respecting them. The Pigeons of Venice are the *protégés* of the city, as the Lions of St. Mark are its

protectors. They are fed every day at two o'clock. A dinner-bell is rung for them; and they are not allowed to be interfered with. Any person found ill-treating a Pigeon is arrested. If it be the first offence, he is fined; if he be an old offender, he is sent to prison.

It is believed by the credulous that the Pigeons of Venice are in some way connected with the prosperity of the city; that they fly round it three times every day in honour of the Trinity; and that their being domiciled in the town is a sign that it will not be swallowed up by the waves. When it is high water they perch on the top of the tower. When the Venetians are at war, or when there is any prospect of a change of dynasty, they gather round the Lion of St. Mark, over the entrance to the cathedral, and consult in a low voice about the destinies of the city. Doubt these facts if you like, but not in Venice. What spiders were to Robert Bruce, what crocodiles are to certain wild tribes in Africa, the Columbines or little Pigeons are to the Venetians.

The real story of their coming is this. On a certain Palm Sunday, in the middle ages, the priests of St. Mark determined to give the people a treat. They collected a number of Pigeons, tied small weights to their wings, and set them flying over the Piazza, with a view to their falling into the hands of "needy and deserving persons." Stones, sticks, and knives were thrown at the birds, and many birds were killed; but some escaped, and concealed themselves in the crevices of the cathedral. One took refuge under the gown of the Virgin Mary (a statue so called), and another got entangled in the hands of a clock, and bled to death. The sacredness of the place screened the survivors from further harm, and all thoughts of pursuing them were abandoned. They became the pets of the city, and after a few years were taken under the protection of the Doge. By that time they had multiplied to such an extent as to have become almost as numerous as the sparrows are in London; and so great were the love and veneration which they excited in the breasts of the populace, that no man's life was considered safe who insulted a Pigeon. Special laws were made for them, called Pigeon Laws, and Venice ran the risk at one time of being permanently called Columbia, or the City of Doves. Finally, a pension was settled upon them, and a daily dinner-bell was rung for their accommodation.

A curious part of this affair is that the birds never forget their dinner hour—never allow their excursions on the Lagoon to interfere with it. Sometimes the bell rings too soon, sometimes too late, but the birds are always there at the right time; and if the bell-ringing be omitted—as it sometimes has been by way of experiment—they scream and flap their wings in a peculiar manner. This may seem incredible, but the story has been verified over and over again, both for the amusement of visitors and the satisfaction of the authorities. It is a pretty sight of a summer's day to watch these birds flying about the Piazza to the sound of the bells, and finally alighting under the window of the terrace, where their dinner is thrown out to them in a golden shower of grain. Once upon a time it was a young lady who performed this office; now it is a young man. The change is for the worse.

The Pigeons of Venice are black and white (or grey), with pink eyes and red feet. A beautiful green collar surrounds the throat; the body is quite white under the wings. Some of them have white tails, whiter than the snow of the Apennines, with opal or topaz eyes, which change their tints a thousand times a-day. It is of birds like these that mention is made in eastern stories, birds that did duty as postmen, and carried letters to and fro between ladies and gentlemen. Some say the Pigeons of St. Mark are so rare a breed that none like them are to be obtained for love or money out of the sea-city; but the vouchers are Venetians. The long and short of the matter is that the Pigeons of St. Mark are a remnant of the ancient glories of the city; a living record of the days when Venice was the mistress of the seas, the centre of civilisation, the market-place and tribune of one-half of the civilised world. To a Venetian these birds are messengers of peace—tokens of pride and power, which will one day re-assert themselves.

Some of the Pigeons took part in the revolution of 1849 (flying between the Austrians and the Italians), and were shot by mistake; others were cooked for food, or eaten raw. But it is the boast of the Venetians that Venice was true to her Pigeons even in her hour of famine; that their dinner-bell was rung regularly; and that their dinner was supplied to them without stint, when hundreds were in want of the commonest

necessaries of life, and were visited at the same time by fire, famine, and pestilence.—(*All the Year Round.*)

BREEDING CANARIES.

[The following renders answers to several correspondents.]

"One swallow does not make a summer, neither will one or two fine days. Better be late, very late, in putting your birds together, than too early." These words, or others of a similar import, I made use of last year in my Guide, and I have this year already received intimation of the evils which result from neglect of this advice. I confess that after the tedium of a dreary winter, though enlivened now and then with the excitement of an exhibition—when nest boxes and all the et-cetera of the breeding-room have been long stored away, and the busy life of the breeding season has been succeeded by the dull quiet of the moulting period; when surplus stock has been disposed of, and new blood imported; when the "last Canary Show of the season" is over—the return of spring rousing all animated nature from its long sleep, refreshed and invigorated with new energies, has a somewhat similar effect on the breeder as on the bird. When the latter is seen carrying stuff about its cage, the former may soon be seen carrying a whitewash brush, and though upon reflection he thinks it is rather early, still he consoles himself with, "Where's the harm in having things put in order?" Prudent housewives will do well to defer the spring cleaning till after this, and paterfamilias may expect to be stopped on the stairs, cage in hand, to receive a lecture there and then on the evils attendant on bird-keeping; the sand, bird seed, and dirt on the stair carpets, being strong evidence for the plaintiff.

Last year I put up my birds in the first week in March, much earlier than I ever did before, but then I had my handy little gas stove in operation, and could maintain an equable temperature. This year I have changed my room, having by means of a small bribe induced materfamilias to give me another, and as yet I have not fitted up my stove. Till within the last few days the weather has been very open, but now we are having frost with a little snow, and I shall defer pairing as long as the frost lasts. It may be that the fact of my having a large twenty-pair cage in hand unwired, has something to do with it, but I shall wait till towards the end of the month, and I advise "A SUBSCRIBER" to do the same.

I have never run a cock with two hens in the same compartment. My plan has always been to introduce him to one of them (the better of the two for choice), and when she has laid her nest of eggs, to pass him through to the second. By the time she has built and is sitting, the first hen will have chipped, and the cock can be returned to assist in feeding, leaving the other to attend to her duties alone. A correspondent, however, an eminent breeder, who always takes a good position at the Palace with his favourite Cinnamons, writes me to say that he ran a cock with three hens in a large flight cage with great success; and one of our best breeders here put two hens with one cock under similar circumstances, and I have seen both hens as well as the cock feeding the young in the same nest, and Brigham Young himself could not have desired a more united happy family. If an opportunity present, I shall not fail to adopt this plan in the present season, putting them together simultaneously, as the hens will be less disposed to quarrel than if introduced at different times. I do not know that this method would do with a Linnet, but I see no reason why he should not be a polygamist, and have a harem as well as a Canary.

When my hens are breeding, I give canary, summer rape, and linseed, mixed, and every day a little hard-boiled egg chopped fine and mixed with crushed hempseed or bread crumbs, with plenty of green food, groundsel, chickweed, or lettuce. When breeding, the egg and hempseed must be increased, giving it twice or thrice a-day, but while the hen is sitting I remove all stimulating food. Some breeders feed high at this time, on the ground that since the hen eats but little, that little should be of a nourishing description, and arguing, with some show of reason, that it is inconsistent with common sense to systematically feed a hen to an unusual degree of bodily vigour, and then suddenly remove the stimulating diet and substitute the plainest food for an interval of thirteen days during which the bird is sitting, only to replace it as abruptly. Such sudden changes of food, it is contended, cannot have a beneficial effect on the constitution. I gradually decrease the supply as the hen shows signs of wanting to lay, and

one reason why I remove it altogether while she is sitting, is that she may have no inducement to leave her nest, though I much question if any amount of temperature, gastronomic or otherwise, would lead her to neglect a duty which the instincts of her nature prompt her to perform. When neglect does occur, such as forsaking eggs, or, worse still, refusing to feed, rely on it the cause is an unhealthy state of body, rather than the result of any temporary local cause superior to the calls of nature. This will answer "C. A. J.'s" query as to when to give egg, and when to discontinue it.

With regard to my mill, I use an ordinary coffee mill, which I find answers well for dry seed, but hemp, or any seed of a moist, oily nature, clogs it up. An old half-worn-out mill not set too fine would do well.

The mating of a dark cock with a mealy hen for one nest, or for any number of nests, will not affect any subsequent nests from a different cock. The young cock will be fit for breeding shortly, he will soon get "fresh." The cage referred to will do, it is certainly rather short, but the depth and height in some degree compensate for that. 18 inches square by 10 or 11 deep are a good size.

I make my whitewash of the best whiting. I think they call it Paris whiting, it can be had of any chemist or oil and colourman. I mix it to the required consistency with milk, thin paste, or best of all with glue size, made by boiling the best Russian glue in water. To produce a pale blue colour, add a pinch of ultramarine well mixed in a little water, and to obtain a still prettier and more effective shade add a little rose pink, mixing till the required tint is obtained. It will, however, dry out very many shades lighter than the wet colour, but by colouring a piece of brown paper and drying it at the fire, the true shade can at once be seen. Lay it well on, and work well into every crevice.—W. A. BLAKSTON.

COLOURING CANARIES.

HAVING read in the Journal the article upon stained or coloured birds, I am induced to write to you on the subject. Of the parties interested in the question I know nothing whatever. For many years I possessed a large collection of different birds, Canaries amongst others. Upon handling them, sometimes I found my hands stained from yellow to a deep orange colour, particularly when bathing and cleaning the feet of my birds. I ascertained that this arose entirely from the bird sand spread at the bottom of the cages. The colour of the sand, or fine gravel, varied from light to dark. It seems fair that this circumstance should be made known in justice to persons thought guilty of colouring their birds.—M. D.

[This is from a very reliable correspondent.—Eds.]

FOUL BROOD—A NEW THEORY AND MODE OF TREATMENT.

In the last number of the German "Bee Journal" I find a long article by Mr. A. Lambrecht, in which he develops a new theory with regard to the origin of foul brood, as well as a novel method of treating the disease. As the German editor has deemed the article worth copying *in extenso* "by permission" from the pages of another paper, whilst the writer declares that he will in all cases "guarantee a favourable result when the prescribed operations are carefully and scrupulously carried out," a brief summary of the theory which he advances, and the mode of cure which he recommends, may not be without interest to the apian readers of "our Journal."

Mr. Lambrecht declares that "the atmosphere of a hive afflicted with foul brood becomes completely infected. The ammonia and sulphureted hydrogen developed therein from the decomposing larvæ combine to destroy the vitality of the bees. Their stores, and especially the pollen, become permanently infected, and are, therefore, peculiarly adapted to sustain the continuous generation of miasmatic corpuscles." He then goes on to point out that "the larvæ of the bee breathe atmospheric air, which, if life is to be sustained, must be pure, and consist of four parts nitrogen and one part oxygen, with a small portion of carbonic acid and watery vapour; but if, as has been shown, the atmosphere of a foul-breeding hive contains in addition a quantity of ammonia and sulphureted hydrogen, the creatures breathing it inhale certain death." It does not, however, appear to have occurred to him that if this be true of the larvæ, it should be equally true of the bees, and

especially of the queen, which may be said never to quit the hive, and which, nevertheless, usually remains in perfect health, even when all the brood combs have become foul and offensive masses of corruption. After stating the fact that pollen is the only nitrogenous substance which bees consume as food, Mr. Lambrecht declares it to be peculiarly susceptible of decomposition, and from various premises which he states at length, he finally arrives at the conclusion that there is no doubt that "*foul brood originates from decomposed pollen.*"

I need not occupy space by attempting to follow the elaborate and somewhat verbose chain of reasoning by which the foregoing conclusion is supported, but will pass at once to the mode of cure which Mr. Lambrecht so highly recommends, and for the particulars of which I am indebted to the "American Bee Journal":—

"Early in the morning of a fine, clear, warm day carry the foul-broody hive to a moderately warm room, well lighted, with closed windows. Remove comb after comb, brushing off the bees, and cut out all the cells containing pollen or brood. Fill the vacant spaces thus caused by inserting pieces of worker comb from healthy stocks, using such, if possible, as are supplied with eggs, and fastening them in the usual manner. The pieces of comb cut out should immediately be burned or buried, or at least made inaccessible to bees. If the hive have a moveable bottom board, anoint its lower edges with twenty or thirty drops of pyroligneous acid. Then set it on three equidistant triangular strips of wood, so as to elevate it slightly from the ground, and burn within it a square inch of linen dipped in melted brimstone, repeating this fumigation at intervals two or three times. Then carry the hive back to its stand, and open the windows of the room to allow the bees collected there to pass out and return to their home. The pollen having been altogether removed from the hive, a shallow box or plate containing oatmeal should be set out for the bees near its entrance. We recommend oatmeal for this purpose, as it abounds in nitrogenous elements, and is hence well adapted to supply the wants of the bees. As an after-cure and stimulant, furnish them with honey diluted with water and slightly warmed. The bees will thus more speedily recuperate; the queen being fed will be encouraged to commence laying earlier than she otherwise would do, and the population roused to recommence their wonted labours.

"When hives have fixed combs it is, of course, necessary to operate in a somewhat different manner. The readiest mode is to stupefy the bees, transfer them to an empty hive, cut out the pollen and brood, and then proceed as above directed.

"It is generally known that the sulphurous acid developed by burning brimstone (composed of one atom of sulphur and two atoms of oxygen—SO₂), renders innocuous the contagious or infectious matter generated in confined spaces, and hence the intelligent reader will understand why we recommend repeated fumigations with brimstone.

"The reason why we advise anointing the lower edges of the hive with pyroligneous acid, is because the creosote it contains possesses the peculiarity of arresting as well as of preventing putrefactive fermentation. But as the acid has the strong and penetrating odour of creosote, the quantity applied should be so small as not to injure or annoy the bees by superinducing prolonged excitement.

"Foul brood most commonly manifests itself in the spring, and that is the time when the curative operation can be most conveniently employed. Nevertheless, should the disease occur in the summer, or later in autumn, the same curative process should still be employed, as the colony will thereby certainly be saved, and the pestilential malady be infallibly arrested and destroyed.

"We part from the reader with the assurance that it affords us heartfelt gratification to have been able to devise from observation and science a process by which a disease known to be disastrous and hitherto deemed incurable, may certainly be eradicated at small cost of time or labour."

If fumigation by means of brimstone be really effectual as a disinfectant, it would appear that there could be no more efficacious mode of banishing foul brood from an apiary than by reverting for a sufficient time to the old system of bee-keeping, in which swarms alone are kept, and old stocks condemned to the brimstone pit, the fumes of which might in this way be expected to answer a double purpose.

I may remark, also, that the efficacy of the process of disinfection by the use of sulphuric acid, as advised by Dr. Preuss, would appear to be entirely dependant on the correctness of the fungoid theory which he has advanced, certain experiments

having, I believe, been made, which are relied upon as demonstrative of the fact that the vitality of choleraic and other forms of morbid fungi is most speedily and effectually destroyed by the application of some kind of acid.—A DEVONSHIRE BEE-KEEPER.

SUPERING.

I AM exceedingly obliged to your correspondents "H. R." and "J. R." for the notice they have taken of my inquiry, and for the valuable information given on the result of their practice in supering. Their remarks will, I think, be of much use to many bee-keepers who like myself, with the advantages which situation, good hives, and supers afford, fail to have a good harvest of honey, but in its place swarms which are not wanted. The subject is an important one with the approach of summer in view, and I believe that the results of the experience of other bee-masters would lead to a discussion interesting to your readers, and open up much that is new to many of them.

The plan of commencing with a small super, recommended by "J. R.," appears to have the disadvantage of causing the bees to be disturbed when substituting a larger, which in a case of having to remove fallen guide combs I have found to have a bad effect. It requires, besides, more time and attention during the day than many can give. A bar with brood and bees, and guide comb on either side, as recommended by "H. R.," appears to be an excellent plan, and so much in keeping with the known attachment of bees to their young brood that it can hardly fail to succeed.

Many recommend supering early in the season, others to wait until much crowding takes place, and if supers with glass sides on the Woodbury plan are used to start with wooden ones, to substitute for the former when well established. These plans I have tried on several hives, but with little success; but hope this year to follow the advice of your correspondents with a better result.—A. B.

AGRICULTURE AND HORTICULTURE.

"THEY leave no sting in the heart of memory,—no stain on the wing of time."—The Hon. Marshall P. Wilder.

Brown Ceres one day with Pomona was meeting

'Nesth Autumn's inspiring smile,

So giving each other a sisterly greeting,

They sat down to gossip awhile.

"I hope you're quite well, dear, this elegant weather,"

"How charming the country," they said,

"And how do you prosper,"—both speaking together,—

"With regard to your business and trade?"

"Look, where the rude thorn bush and bramble were springing,

With fruitage the Apple tree bends,

The scythe of the mower at sunrise is swinging,

And the song of the reaper sounds.

"Let us walk hand-in-hand, for no obstacle caring,

Till Vines o'er the mountains shall grow;

Its suit of green velvet, the brown heath be wearing,

And deserts with plenty overflow.

"The gold in its mine with excitement and wonder

May summon an emigrant band,

And the chariot of Mars trample on in its thunder,

But we're the true strength of the land.

"For us, no lorn wife in her cottage is grieving,

Earth welcomes us both in her prime,

No sting in the bosom of memory we're leaving,

No stain on the pinion of time."

MRS. LYDIA H. SIGGURNEY.

OUR LETTER BOX.

SIZE OF BROODS (T. N.).—A "merric man withal," and we hail you heartily. A scholar too; *Abbe Magister*! May you never be *envious*; we are sure you will not be *fort envious*. The number of chickens to be under a hen depends much on the time of year when they are hatched. It is only in the winter we recommend a small number. We begin hatching early and out of season, and experience has taught us that in long and dark nights we rear as many when we hatch eight as when we hatch fifteen. Now we begin putting fifteen eggs under each hen, and often entrust one with one or two and twenty chickens. They then require attention—more, perhaps, than any amateur can or will give. We write principally for amateurs, and must be as careful as possible to avoid giving any advice that may lead to disappointment. Greaves are very stimulating. They will make boys lay, but they induce disease, especially dropsy. The proper way to give them, if given, is to chop them small, and put them into a pail or pan, pour boiling water on them till they are covered, and then spread a double sack or matting over the mouth of it to confine the steam. In an hour they are soft and fit to use.

HATCHING PEA FOWL'S EGGS (R. P.).—A large hen will hatch three or four Pea fowl's eggs, and rear them, receiving as much help as she would have for Pheasants or Turkeys. The treatment is identical.

EGG-EATING HEN (*Philornis*).—There must be something wrong about your treatment. Now and then we hear of a hen eating the eggs that

have been put under her, but it is a very rare case. We have had such a hen, but we broke her neck directly. We believe it arises from some permanent organic derangement of the stomach. If any should doubt this, we can only say that we know, and prove constantly, that an internal injury will not only unsex a bird in plumage, but it will reverse it, and give the desires and feathers of the opposite sex. Believing as we do, we advise you to kill the offender. We can only understand another taking to it by believing that she learned it of the first. We would not be too Draconian, but if she ate another she should die also. In the meantime avoid stimulating and adopt cooling food, such as lettuce, &c. Hens shut up, and heated in body, unable to obtain that which Nature provides them when at liberty, eat any strange and even unnatural thing. It is a mistake to add any Hondan to the half-bred Brahmas and Dorkings. It is always wrong to mix sitting and non-sitting breed—where anything more is required than the mere supply of eggs. We have found the best preventive for egg-eaters is to put hard composition eggs, about which they peck till they are tired and their beaks are sore, when they give up the practice. Your Brahmas should have laid earlier; well-fed pullets of that breed should certainly lay at seven months old. If bran is part of your food, give it up.

BRAN AS POULTRY FOOD (*Idler*).—The nutriment in bran is said to be very great. Analysis shows this, and some go to the length of saying it is more nutritive than the flour of wheat. Brown bread is certainly fattening, yet we believe very little in bran as poultry food, and we give none.

MORTALITY AMONG CHICKENS (*W. H. B.*).—If your chickens are well housed, covered at night, kept dry and from draughts, are on the earth, and not vexed with wooden, stone, or brick flooring; fed early and late on chopped egg and cooked meat, bread and milk, a few crumbs, supplied with ale to drink, and used to bask and roll in, with fresh growing sods of grass to eat, they will not die. If they are on artificial flooring, or if any of the principal of these conditions are omitted, then they live in spite of it, if they live. (*Subscriber*).—Read the previous answer. Take your chickens out of the room—that is the cause of death—put them in a barn or a garden, or where you will, feed and treat them as you say you do, and they will do well. On board flooring they cannot scratch, their feet are always unnaturally spread out, the boards are damp, affording neither food nor warmth, and the fowls die of cramp and paralysis.

THIN-SHELLED EGGS (*Fido*).—If your hens have free access to lime-mortar grit, and the materials which go to form egg-shell, then they are out of health and must be treated. If they have not, then they simply want the material, and being supplied with it, the complaint will cease. The double eggs will hatch sometimes, and produce two chickens. If you have been feeding on stimulating food, reduce it, and give green meat.

FOWLS UNNOTICED AT PECKHAM (*H. S. F.*).—As your birds were commended elsewhere, and by competent judges, you may safely breed from them. No judge will allow himself to be questioned.

KENT AND SURREY POULTRY SHOW.—Spanish: Second and Third, E. Corke. Highly Commended, R. Wright, Holloway.

EARLY CHICKENS (T. T.).—You have been unfortunate. Give your remaining chickens bread soaked in ale. The following, which we extract from "The Poultry-keepers' Manual," may be suggestive for the future:—"For the first fortnight chickens are best kept upon alternate feedings of Indian meal, bread crumbs, and eggs boiled hard, chopped fine, and mixed with a little crushed hempseed. The Indian meal should be only so far moistened as still to remain crumbly. After the first fortnight, and until large enough to feed with the older fowls, give them daily, in addition, a feed or two of either bruised wheat, or bruised grits. From the very first days of their life continue, without fail, to give them daily fresh green food. Cabbage and lettuce leaves, and mowings of grass are best. Remember, above all things, that a little food given often—every two hours is not too frequently—is the chief rule for chicken-rearing."

CHICKS DEAD IN THE SHELL (*Subscriber*).—As the chicks were perfect, and no chill could have been incurred, we know of no probable cause of their death, except that they were weak, and had not strength to break the shells. This is liable to happen if the eggs were stale.

WHITENAVEN POULTRY SHOW (*G. Pounder*).—If you can prove that your not receiving the labels until too late for you to send your birds was from a default of the Committee, or of their Secretary, you might recover your entrance money; but if the default was one of the General Post, you could not recover your entrance money.

AGE OF CANARIES, &c. (*E. S. P.*).—The average age of Canaries is five or six years, but when kept for breeding less. Your Doves, perhaps, are not a pair; if they are, the hen is barren. A hen eating her eggs is probably from the want of calcareous matter. We know of no certain cure but to fatten her for the table. An egg filled with mustard and cayenne pepper, and placed in the nest, might probably cure her of her vicious propensity; or an egg boiled hard, with a little of the shell broken and given to her quite hot, if she pecked it, would probably cure her.

DETECTING A PARROT'S AGE (*H. H.*).—It is rather difficult to decide the age of a grey Parrot upwards of three or four years old. One about three or four years old would have the beak slender and black, and not very much hooked. The claws also would be thinner and fresher-looking than in an older bird, and the white round the eyes not so plentiful nor so white. If under two years old there would appear some dirty-looking feathers on the shoulders. To ascertain the sex is also very difficult. The cock bird is larger, and has a larger head than the hen.

POULTRY MARKET.—MARCH 10.

WE are gradually approaching scarce times, and the prices rise accordingly. We may look for it now, and for some weeks, till the poultry of the year make its appearance in force.

	s. d.	s. d.	s. d.	s. d.
Large Fowls.....	3	6	4	0
Smaller do.	3	0	3	6
Chickens	2	6	3	0
Go-lings	7	0	8	0
Ducklings	3	6	4	0
Pigeons	0	10	1	0
Guinea Fowls.....	2	6	3	0
Partridges	0	0	0	0
Hares.....	0	0	0	0
Rabbits.....	1	4	1	5
Wild do.....	0	9	0	10
Grouse	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 18—24, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. h.	
18	Th	Meeting of Royal and Linnean Societies.	49.9	33.2	41.6	13	9 a	6 f	8 a	8 f	5	8 9	77
19	F	Cambridge Lent Term ends.	50.9	33.2	42.0	15	7 6	9 6	7 9	morn.	6	7 51	78
20	S	Oxford Lent Term ends.	51.2	33.6	42.4	17	5 6	11 6	45 9	40 0	7	7 33	79
21	SUN	6 SUNDAY IN LENT. PALM SUNDAY.	50.4	32.5	41.4	19	3 6	12 6	32 10	43 1	9	7 15	80
22	M	Meeting of Royal Geographical Society.	50.4	34.2	42.3	20	1 6	14 6	30 11	41 2	9	6 54	81
23	Tu		50.7	33.2	41.9	17	59 5	15 6	after.	32 8	10	6 38	82
24	W		51.2	32.0	41.6	16	57 5	17 6	51 1	17 4	11	6 20	83

From observations taken near London during the last forty-two years, the average day temperature of the week is 50.7°; and its night temperature 33.1°. The greatest heat was 69°, on the 19th and 20th, 1836; and the lowest cold 16°, on the 20th, 1845. The greatest fall of rain was 1.11 inch.

SUBTROPICAL PLANTS.

EXCEPT from those with abundant glass accommodation, and with purses "ample yet full," these plants have not hitherto received the attention which they deserve. The cost of the plants was a serious drawback to their general culture, but now, thanks to the enterprise and perseverance of our seedsmen, one at least of the obstacles to the employment of such plants for the summer decoration of the flower garden has been removed. A short time ago the plants were expensive to purchase, and they are so even at the present time, but now their seeds are offered for sale, and a packet containing enough to produce a dozen or more plants may be had for the price of a small plant; all that is necessary beyond that being means for raising the plants and growing them to a size fit for planting out, and a structure or structures for their safe preservation in winter and growth in spring, so as to insure their being planted-out in good condition. There is a something in sowing the seed, and tending a plant in all its stages, which acts as a charm. It is more thought of, and a greater interest is taken in it than in one purchased. The plant is thought finer, and the fruit sweeter, when one can claim most of the credit attached to it as a result of careful cultivation.

Foremost in the race for meeting the public requirements in this particular are the Messrs. Veitch, to whom we owe the introduction of numerous rare and beautiful plants; and it is to their seed catalogue for 1869 that I am indebted for the following list of subtropical and ornamental-foliaged plants which may be raised from seed; to it I shall add such cultural hints as I trust will be of service. I shall classify the plants under two divisions—viz., Annual and Perennial, and subdivide each into Half-hardy and Hardy Species or Varieties, naming none but those suitable for our climate during at least the months of June, July, August, and September, or if otherwise the fact will be stated in the notes appended to each. A few of the best and most distinct will be marked with an asterisk (*).

1. SUBTROPICAL AND FINE-FOLIAGED PLANTS—ANNUAL AND TENDER.

These require to be sown in a mild hotbed of from 65° to 75°, with an increase from sun heat to 80° or 85°, and a bottom heat of 70° to 75°, in which they not only need to be sown, but to be grown until they become strong. They should be well hardened off, and exposed to the air prior to being planted-out, and it is bad practice to allow them to become potbound and stunted in growth before being placed out of doors, for they rarely do any good afterwards, and on that account some consider them not equal to the description, as well as unsuitable for the purpose for which they are really adapted.

AMARANTHUS BICOLOR.—Foliage crimson and green. 2 feet.

A. TRICOLOR.—Foliage scarlet, yellow, and green. 2 feet. More ornamental than the preceding, but neither is very desirable for out-door decorative purposes, except in exten-

sive arrangements, and even then they require warm sheltered situations.

***A. MELANCHOLICUS RUBER.**—Dark reddish-crimson leaves. Bright and distinct, fine for masses or borders, but should be stout, and from 9 inches to 1 foot high before planting-out, deferring that until the end of the first week in June, or later if cold.

A. ELEGANTISSIMUS, closely allied to the last, but more compact in growth, and with the base of the leaves deep red, and the upper part bronze-purple. It is a new variety, and will no doubt prove a very effective plant for beds and borders, being brilliant as a single plant, and we may conclude it will be equally so in a mass. This and *A. melancholicus ruber* attain the height of 1½ foot. They should have a bed of rich rather light soil, for in a cold wet soil they do not succeed. An open, sunny, yet sheltered situation is requisite.

***DATURA FASTUOSA HUBERIANA FLORE-PLENO.**—Foliage bold and profuse, bright green; stem and branches deep purple; flowers white, lilac throat, large, drooping, very like those of *D. arborea*, and double. It is one of the finest of the genus, attaining a height of 4 or 5 feet. To have it fine the seed should be sown in autumn, and the plants kept during the winter on a shelf near the glass in a greenhouse, keeping them dry, but not to such an extent at any time as to cause the plant's foliage to flag much. The seed should be sown not later than August, and the plants should be strong, and potted-off singly in small pots, and established before winter. In spring they should be encouraged by a gentle increase of heat, a moist atmosphere, and a larger size of pot as often as those they are in become filled with roots. Well harden-off before planting-out. A light turfy loam, with a fourth of old cow dung, and a free admixture of sharp sand, is the most suitable compost. A plentiful supply of water and frequent syringing overhead will be necessary to keep down the attacks of red spider, to which the whole of this family are subject.

***FERDINANDA ENIMENS** (*Crescentia macrophylla* of Johnson's "Cottage Gardeners' Dictionary").—Large bold foliage; having a noble appearance, and being tall, it is well adapted for the centres of beds and backs of borders. It should be sown early in March in a good brisk heat, forwarded in heat, and thoroughly hardened-off previous to being planted-out. A compost of two-thirds turfy light loam, and leaf mould and old cow dung, or well-rotted manure one-third, with a free admixture of sharp sand, suits it. The plants ought not to be planted-out until the beginning of June, and should have a sheltered situation. It attains the height of from 8 to 12 feet. The remarks attached to the *Datura* apply to this plant, which it is well to treat as a biennial, the seed being sown in summer, and the plants treated in the same manner as *Humea elegans*, also desirable for subtropical gardening, being very elegant, graceful, and fragrant, and too well known to need description. For its culture I will refer the reader to Vol. xii., New Series, page 403. The *Ferdinanda* is a perennial, but may be treated as an annual or biennial.

MARVEL OF PERU, VARIEGATED.—Foliage bold and handsome, with golden variegation. The plant is a half-hardy

perennial, but if treated as a half-hardy annual, plants may be had fine the first year.

RICINUS AFRICANUS ALBIDUS.—Fine foliage, stems silvery, veins white. 6 feet. **R. brasiliensis viridis.**—Fine large green foliage. Fruit green. 6 feet. **R. Belot de Fougères.**—Foliage glaucous, large, and handsome. Fruit dark green. 6 feet. **R. macrocarpus.**—Foliage light green, or both stems and leaves mulberry-coloured. 6 to 8 feet. **R. insignis.**—Foliage and fruit glaucous green. 6 to 8 feet. **R. Obermanni.**—Leaves dark, large and fine. 6 feet. **R. purpureus cinerescens.**—Foliage dark and bold; fine and tall. 8 to 10 feet. **R. sanguineus tricolor.**—Foliage and fruit red. 6 feet. **R. compactus.**—Foliage bright green, very elegant, and of close habit. 6 feet. These Castor Oil plants are very ornamental, having large Vine-like leaves from 2 to 3 feet across, and under good cultivation they attain a height of 10 or 12 feet. They form handsome beds. The seeds should be sown not later than the beginning of March in a brisk bottom heat, and the plants grown in heat, repotting them as often as they fill their pots with roots, and hardening them off well before planting-out. For soil, use a compost of two parts turfy loam, one part turfy peat, and one part leaf mould, with a free admixture of sharp sand, giving good drainage. Keep the soil moist so as to encourage free vigorous growth, and afford a light airy position, so as to have the plants stiff and well furnished. When planted-out they should have a position well sheltered from wind, as they are liable to suffer if exposed to strong breezes.

***ZEA JAPONICA VARIEGATA.**—An elegant tall-growing plant, the leaves having a broad stripe of variegation up the middle. It is very ornamental for the centres of beds. It requires a light rich soil, should be sown early in heat, and be strong and well hardened-off before planting-out. 6 feet.

ZEA CUSCO.—This is, perhaps, the finest of all the giant kinds of Maize, the foliage being green and broad, and the plant growing very tall. It is ornamental for the centres of beds or groups and the backs of borders. 10 feet. A sheltered situation is requisite, otherwise its fine handsome foliage is liable to be broken and destroyed by the wind.

NICOTIANA GLAUCA.—Leaves glaucous and shining. 6 to 8 feet. **N. grandiflora purpurea.**—Flowers large, and purplish. 6 to 8 feet. **N. macrophylla gigantea.**—Tall and elegant; leaves large. 8 to 10 feet. These, the Tobacco plants, are very handsome-foliaged plants, and of free growth. The soil should be rich, and the plants strong before being planted-out. Supply them well with water in dry weather.

2. ANNUAL AND HARDY

ANDROPOGON SORGHUM (RUBENS).—A large-growing Grass, with reddish stems and foliage. Although hardy it should be sown in March in gentle heat, and grown in a cool structure in order to be strong by the middle or end of May. Good rich soil and a plentiful supply of water in dry weather are necessary. 3 to 4 feet.

ARGEMONE HUNNEMANNI.—Foliage glaucous, 10 inches or more long, having white spines and veins. A light soil is most suitable. 2 feet.

ATRIplex hortensis RUBRA.—A very common old plant, but more noble and effective than many recent introductions. Foliage red, inclining to purple. Fine for the centres of beds and the backs of borders. 5 to 6 feet. It should be sown, where it is to remain, in April, in good, rich, light soil.

BEET, DELL'S CRIMSON.—This variety of Beet is, perhaps, the best dark crimson-foliaged. It should be sown early in April in drills where it is to remain, and is best in bands or lines in beds or borders. 1 foot.

BEET, BRAZILIAN.—Leaves large, bright yellow or crimson, with white ribs, rendering it less culinary-looking than the majority of Beet, the beauty of which I cannot see; this, however, is showy. To have a good effect the bands or lines ought not to be less than 2 feet wide, putting in two or three lines 9 inches apart, and thinning-out the plants to that distance from each other in the lines. Sow early in April.

CARDUS BENEDICTUS.—This, known also as the Blessed Thistle, is a fine old very common plant, I believe a perennial, but it attains a good size the first year; the leaves are broad, long, with white variegation, and spiny, having a noble appearance. 3 to 4 feet. It should be sown early in April, in good, rich, light soil, and the plants thinned out to 12 or 18 inches apart.

HELIANTHUS ARGYROPHYLLUS STRIATIFOLIUS FLORE-PLENO.—Foliage glossy, sometimes striped, flowers yellow, 4 feet. It is a fine variety of Sunflower for borders.

***II. MACROPHYLLUS GIGANTEUS.**—Foliage large and somewhat glaucous, habit pyramidal, and attaining a height of from 12 to 18 feet. Rich light soil; sow early in April where the plant is to remain, and thin out. This is a fine plant for the centre of a bed, relieves the monotonous aspect of carpet arrangements, and is especially suited for the backs of borders.

***OXALIS TROPEOLOIDES.**—Foliage bronzed crimson, very much in habit resembling Suckling Clover, the plant growing close to the ground, and not exceeding 6 inches in height. It is one of the best bronze-crimson plants for edging beds and borders, and for carpeting. A light gravelly soil is the most suitable; in such it becomes quite a weed, and is perennial. It should be sown in March in sandy soil in a seed pan placed in gentle heat, and the young plants well-hardened off and planted out in May at from 6 to 9 inches apart. It may be sown in the open ground in April. It is correctly a perennial, but not hardy except in well-drained soil.

PENNISETUM SETOSUM.—A pretty Grass with fine crimsonish inflorescence. It may be used as the centre of a small bed, and should be well supplied with water in dry weather. 2 feet.

***PERILLA NANKINENSIS.**—Foliage bronze-purple. Fine for the lines of ribbon borders, bands, or centres of beds. Well known, and deservedly popular. 1½ to 2 feet. It should be sown in a seed pan placed in a gentle heat, pricked off about an inch apart when large enough to handle, and kept near the glass, giving plenty of air, so as to have it dwarf and strong for planting out in May. The seeds should be sown early in April, and about the middle of the month it may be sown in the open ground. It endures pinching to any extent, and may be pegged down, in either way forming one of the finest of edgings.

The above are within the reach of all, at least most of them are, and they are the more valuable on account of the culture being limited to the season of growth. They do not crowd on the glass structures in winter, and they do away with the monotonous and tame effect produced by the majority of our dwarf bedding plants.—G. ABBEY.

(To be continued.)

SELAGINELLAS.

Or the plants grown at the present day none are more worthy of notice than the Selaginellas, many of them rivaling Ferns in gracefulness and beauty. The size and perfection they attain, as we see them at our shows, will testify their merits.

Selaginella Poulterii.—To see this is to admire it. From its description I was led to order it, and I have a large pan of it growing most beautifully. It is somewhat after the style of *S. denticulata*, in a miniature form. This sort is sure to become a favourite, it is very fast-growing, and particularly neat. I very recently saw a large specimen, and its appearance was very chaste indeed.

S. casia arborea is one of the handsomest and most distinct climbers I have ever seen in a Fern house. I have it over one end of my stove, and running along the rafters, intermixed with other climbers, such as *Passifloras*, *Thunbergia Harrisii*; it forms a most pleasing contrast. It is very free-growing, and the foliage is of a bright lustrous blue, especially when not exposed to too strong sunlight.

S. lepidophylla makes a very attractive object when grown under a bell-glass. It is one of the choicest of its class. I grow mine in a large pan. When shifting the plant some time ago, I used some large pieces of charcoal; this week I have repotted it, and I found its roots clinging so tightly to the charcoal that I did not disturb them; I had thus a proof of the value of charcoal, which I use very extensively in potting. A dozen plants of this variety under a bell-glass have a very chaste appearance. It will do without glass, but requires skill and attention to grow it well.

S. atroviridis is very distinct, very free-growing, and the colour of the foliage most beautiful.

S. densa is very lovely. I grow it in pans, 3 feet in diameter, using plenty of sandstone for drainage. When the pan is covered, this moss is most beautiful. When the pan is ready I plant little tufts all over the surface about 1 inch apart, and they very quickly meet. A pan here and there about a house looks very beautiful.

S. denticulata, which is well known, I grow in a vinery. For use in glass dishes along with the dessert it is perfection, and I think it makes the fruit look more tempting, having such a cool and elegant appearance. I also grow it as pyramids. I will describe my plan. I take a pan 3 feet in diameter for the bottom, and place in it pans of smaller size, one above the other,

till the pile is about 2 feet high, and on the top I use small pots, these I cut. I put drainage and soil in each, make a neat pyramid, plant with *S. denticulata*, in a very short time it will be perfectly green. These pyramids have a most beautiful appearance; I have in my stove six or eight of them, which are the admiration of all who see them. In cool houses this *Lycopod* makes a most beautiful edging. *S. denticulata variegata* does best in a cool house. I have not had this variety long; but where grown in a group the effect is charming; it strikes the eye directly you see it. It is a very free grower.

S. Willdenowii, although old, is one of the most beautiful of *Lycopods* when grown in a shady part of the house. For decorating the dinner-table as well as the conservatory it has no rival.

S. Lyallii is also very beautiful.

Many of the recently introduced species, such as *S. Wallichii*, *S. filicina*, *S. conferta*, and *S. Lobbi* rival the choicest Ferns in beauty, and the numbers of species now in cultivation embrace a sufficient variety for all the requirements of the Fern house or stove.—F. P. L.

MESSRS. VEITCH'S FRUIT-TREE NURSERY AT FULHAM.

It is only a year or two since I saw and admired the grand old orchards and market gardens of the late Mr. Fitch, of Fulham, which had become world-famous. I had often read with wonder of his great fields of Lettuces, Asparagus, &c., and when I saw them I was not disappointed. Now, however, all is changed; all, or nearly all, that I wondered at is swept away, and a new scene, a new vegetation is over the land. The fine old Apple and Pear trees are all destroyed, and nothing remains but some of their trunks, which have been utilised to form part of a substantial fence which now encloses Messrs. Veitch's fine new fruit-tree nursery—a nursery bidding fair to take as great a precedence in that line as the famed establishment at Chelsea has done in hothouse plants.

It is out of the way somewhat—down a narrow lane, and near Parson's Green, Fulham, a not particularly aristocratic neighbourhood, about twenty minutes' walk from the Chelsea neighbourhood, with no glittering signboard or coat of arms to tell the passers-by that the great horticultural firm of Messrs. Veitch & Sons has there established itself, and is carrying on fruit-tree culture with a spirit and energy worthy of its time-honoured and well-earned name. Fruit-tree nurseries are almost proverbial for their roughness and untidiness; mud and weeds from them are almost inseparable; yet here is one tidy almost to a fault, everything is so neat and orderly. The roadways and pathways are all gravelled and neatly edged with Box and other edgings, the trees all so beautifully and so regularly planted each in compartments by themselves, or nearly so, the ground so neatly dug, and scarcely a weed to be seen, that altogether it is quite a pleasure to visit this fine nursery.

It is not, however, for its neatness alone that I have admired this nursery; that, although much to be recommended, is only as the setting to the jewel, but, if it does not enhance its intrinsic value, it makes it appear perhaps more valuable than it really is. Nothing, however, is required to set off the valuable and excellent collections of fruit and other trees here; they answer for themselves, at least to those who may go to see them, or who may become purchasers. For those who have not the same opportunities I write.

The stock, mostly young, of Peach, Apricot, Apple, Pear, Plum, and Cherry trees, is in very fine condition. Whole quarters are devoted to one particular sort and one form of training. All of the trees are annually removed, so that the roots are ever short and fibrous, and the plants when sent to their final destination are but little checked; they may be said to get used to removal. Under this annual-removal system the shoots, it may be, are not of so great a size as those produced from plants that have not been removed, but they are 50 per cent. better. There is a practice in some nurseries in training young trees, severely to be condemned, although it may have the merit of forming handsome-looking trees quickly—that is, the cutting-down strong maiden plants, and training them without transplanting; such trees are little better than rubbish, they never succeed well when finally planted out. In Peach and Apricot trees this is especially the case. In selecting young trees of these it is not strength or vigour that should be looked for, but cleanness, firmness of wood, uniformity, and the proper situation of the buds for the future formation of

the tree. A quarter of one-year-trained Peach and Nectarine trees of Messrs. Veitch's, probably two thousand plants, is decidedly the finest I have seen for some time. All the trees were transplanted in the autumn; they are so nice and sturdy, so strong yet not gross, and so beautifully budded, that, to use a common expression, one could do anything with them.

The Apple, Pear, and Plum quarters are equally excellent, and the trees on all sorts of stocks, in all forms, shapes, and sizes. Around the edges of the walks, as a bordering for the other trees, are great numbers of the at-present-fashionable cordons, equally as good home-grown as any I have seen on the Continent. Those, therefore, who may wish to procure these trees in whatever form they desire—cordon oblique, horizontal, vertical—one-armed or two-armed—may here do so to their heart's content. A novel form of cultivating the Morello Cherry, which I have only once seen before, was pointed out to me—that is, as dwarf Gooseberry bushes, a really admirable plan. How enormous the quantity of fruit that might be grown in a small space in this way! and we all know how well suited the Morello is to this style of growth.

Another speciality now receiving Messrs. Veitch's attention is orchard-house trees, and a finer lot than those to be seen here cannot well be desired. Numbers of them are established in pots; some plunged in the soil in a small orchard house—fine examples they are, too—others plunged in the open quarters. An excellent mode adopted by the Messrs. Veitch, or what Mr. Reid, their able manager, calls "preparing the trees," is the planting-out in the open ground the young maiden trees, and there growing them to the size and form desired. They in this way attain the desired size sooner, and form much stronger and finer trees than those that may be grown in pots. Example—a maiden Peach tree is planted in light but rich soil in November, and pruned as required in February, the side shoots pinched if requisite during the summer; such trees, if potted in the end of September, will fruit in the following year. If larger plants are desired they must remain in the ground another season or two. By this plan the pot cultivation of one season at least is entirely avoided, and Messrs. Veitch's trees treated in this way are very good indeed—fruitful stocky trees.

Here also Messrs. Veitch have their vegetable trial beds, deeply interesting in their season. At present, however, there is little to be seen save a few Cabbages, and the early Peas just forming a thin green line. Through this portion of the ground are planted widely apart small pyramidal specimens of all their collection of Pears, &c., for fruiting purposes.

Lastly, Although it is rather out of character with the rest of my notes, I must perforce notice the really magnificent collection of variegated *Hollies*. Always handsome and pleasing as these plants are, here they are something more; they are staked and trained with admirable care and skill, uniform in form and size, bushy, healthy, and vigorous, each an example in itself, more perfect by far than our specimen prize Azaleas. What immense variety there is amongst these plants! Here, every sort being planted in lines or masses by itself, the distinctions are beautifully brought forth, varying in shade from lightest silver to deepest gold. Of the principal I may mention Veitch's Best Silver, Silver Queen, Veitch's Best Golden, and Waterer's Golden. To look at them in the mass—two thousand of them together, evenly ranged as to height from 2 to 4 and 6 feet, they are to me a prettier sight than the loveliest ribbon border ever planted.—ARCHAMBAUD.

NEW ZEALAND SPINACH.

THERE have been several statements in your Journal lately about New Zealand Spinach, all agreeing that it requires heat to raise the seed. I can assure you it will do well with less trouble; four years ago we raised some in heat and planted it on a border, and ever since we have not sown any, as it comes up in hundreds on the same border. All we do is to clear it away when the frost kills it, and dig the ground when we are digging the other ground round it. About the middle of May the plants begin to appear in abundance, and keep up a good supply for the table until the frost kills them.—T. DICKSON, *Berkshire*.

SELECTION OF STRAWBERRIES.

I HAVE proved the good qualities of the following:—Marguerite, Sir J. Paxton, President, Sir C. Napier, Admiral Dundas, and Filbert Pine. These varieties are well worthy of notice by Strawberry growers. I have grown single fruits of Marguerite

of superior flavour, weighing nearly 2 ozs. ; I have also had from forty to fifty berries, all ripe at once, from a one-year-old plant of the same.

The above-named have been grown with the same treatment, and only a short distance from Dr. Hogg, Mr. Radclyffe, Wonderful, Cockcomb, &c., which have borne fruit profusely of first-class flavour, though not quite so prolific as Marguerite. The sorts named in my list I find answer admirably for forcing as well as for out-door culture; but do not find that any of them require coddling in winter.—J. W., JUN.

ROYAL HORTICULTURAL SOCIETY.

FIRST SPRING SHOW.—March 13th.—Successful as the March Show at Kensington was last year, that of Saturday last was decidedly the best the Society has ever held at the same season, for though sometimes there may have been a greater diversity of subjects, at no season could richer masses of colour, more varied hues, have been brought together in the same space. Perhaps, too, the display was rendered even more brilliant in the imagination than it was in reality by the contrast between within and without—the one all warmth, brightness, and beauty, the other bleak, gloomy, and bare; for a second winter has set in, or rather the first winter we have had, and the east wind blew piercingly, the sky was overcast, and snow fell at intervals, but not enough to whiten the ground. Notwithstanding, there was a large concourse of visitors, among whom was Her Royal Highness the Duchess of Cambridge, who ever testifies the interest she takes in gardening by her attendance at the London shows.

The exhibition of Hyacinths, for number and magnificence, was such as we have never before witnessed, for although on one or two former occasions individual collections may have slightly surpassed those shown on Saturday, yet taken as a whole they have certainly not been equalled. The spikes in the grand collections from Mr. William Paul and Messrs. Cutbush were massive and stately, symmetrical, beautifully coloured, and evenly matched. The contest between these two competitors for the first place in every class where they met was extremely close, and carried on with varying success, but nowhere was it keener than for the prizes given by the Dutch bulb-growers for thirty-six distinct sorts, and for twelve sorts, three of a sort. In the former Messrs. Cutbush were first with *Reds*: Gigantea, Princess Beatrice, pale pink, Von Schiller, Duke of Wellington, Lady Sale, deep crimson, Prince of Orange, Florence Nightingale, Ornement de la Nature, Solfaterre, Macaulay, Howard, Emmeline, and La Jeune Anna, pale rose. *Blue*: Lord Palmerston, very beautiful, Baron Von Tayll, Couronne de Cello, Grand Lilas, Garrick, Charles Dickens, Orondates, Mimosa, Marie, and Leonidas. *White*: Paix de l'Europe, Alba superbissima, Mirandoline, Queen of the Netherlands, Princess Helena, Alba maxima, and Mont Blanc. The others were Haydn, mauve; Duc de Malakoff, buff, striped with pink; Ida, yellow, splendid; and of dark, nearly black kinds, La Nuit, splendid, Feruck Khan, and General Havelock. Mr. William Paul was second with *Red*—Fabiola, Gigantea, Prince Albert Victor, one of the newer kinds, a splendid crimson, with a fine close spike; Von Schiller, Garibaldi, La Prophete, Princess Helena, soft pink, very beautiful; Vaarbaak, deep crimson with a shade of scarlet, new in 1867; Koh-i-Noor, Macaulay, La Joyeuse, and Princess Clothilde. *Blue*: Garrick, Baron Von Tayll, Grand Monarque, new, in the way of Grand Lilas; Laurens Koster, Grand Lilas, Sir Lawrence, dark blue; Couronne de Cello, remarkably fine, both in bells and spike; Bloksberg, Charles Dickens, splendid; King of the Blues, magnificent; and Princess Mary of Cambridge, pale blue, both new kinds. *White*: Grandeur à Merveille, Tubiflora, blush, stained externally with purple; L'Innocence, Snowball, Alba maxima, and La Grandesse, a splendid new white. The others were Haydn and Sir Henry Havelock, of the mauve class; Ida and Bird of Paradise, large and beautiful yellow; Duc de Malakoff, buff, striped; and of the very dark kinds General Havelock and Feruck Khan. It is impossible to speak too highly of these two collections; the spikes were large and remarkably perfect throughout, and it would be superfluous to add to the name of each variety any comment; all that could be said would be, that a few were less remarkable than others.

The third prize went to Mr. G. Davies, of the Green Lane Nursery, Liverpool, whose collection, though far from equalling those just referred to, was yet very good, especially his Von Schiller, General Havelock, Haydn, Madame Van der Hoop, Nimrod, Duke of Wellington, Gigantea, and some others. Mr. C. Turner, of Slough, was fourth, with a collection containing many excellent spikes, but not set up to the best advantage—a circumstance the more remarkable in one noted for the excellent taste of his arrangements. Messrs. Van Waveren & Sons, Hillegom, near Haarlem, exhibited in this class a collection of Hyacinths in glasses, with such large and well-grown spikes, that many supposed they had been grown in pots. For these an extra prize was awarded. Good exhibitions also came from Mr. Hawkins, Oaklands Nursery, Shepherd's Bush, and Mr. T. Potter, gardener to B. Noakes, Esq., North Hill, Highgate.

The class for thirty-six Hyacinths, three of a sort, was one in which only such great growers as Messrs. Cutbush and Mr. William Paul were expected to enter, for even with the greatest care in selecting and growing the bulbs, there must be a large number to choose from to secure three of a kind of such size and so evenly matched. Accordingly the struggle for the first place was confined to the two exhibitors named, and very close it was; some said one would be first, some the other, but the Judges, after careful comparison, decided in favour of Messrs. Cutbush. Their collection consisted of Florence Nightingale, Gigantea, Duc de Malakoff, Grand Lilas, Marie, Baron Von Tayll, Feruck Khan, General Havelock, Ida, Macaulay, Snowball, and Queen of the Netherlands. Mr. William Paul, who was second, had Gigantea, Fabiola, Garibaldi, Von Schiller, Grand Lilas, Princess Mary of Cambridge, Garrick, Feruck Khan, Ida, Snowball, with remarkably large spikes for that variety; Grandeur à Merveille, and La Grandesse, magnificent, pure white. In these two collections there was scarcely a shade of difference between the three of each variety, so equally were the spikes grown. Garibaldi, Florence Nightingale, Von Schiller, and Gigantea were especially fine among the red kinds, Grandeur à Merveille and Snowball among whites, and of other colours Ida and General Havelock were equally remarkable for excellence. The only other competitors were Mr. W. Cutbush, of Barnet, and Mr. Hawkins, of Shepherd's Bush.

Coming now to the Society's classes, Class 1 was for eighteen Hyacinths, distinct sorts. In this Mr. William Paul took the first prize with a splendid set, consisting of Ornement de la Nature, pale rose with pink stripes; Von Schiller, pink, striped with crimson, brilliant in colour, with a large and very close spike; Fabiola, rose, striped with deeper rose; Koh-i-Noor, salmon rose; Vaarbaak, new, crimson tinged with scarlet; Charles Dickens, new, single mauve, fine close spike; Baron Von Tayll, Grand Monarque, Charles Dickens, pale blue; Grand Lilas, remarkable for the size of its spike and bells; Ida and Bird of Paradise, yellow, the latter especially fine; Garrick; King of the Blues, well worthy of its name; Prince Albert; Seraphine; La Grandesse, with pure white bells of great size and substance; and L'Innocence. Messrs. Cutbush, who were second, had also a splendid eighteen, the kinds being Haydn, Gigantea, very large and fine; Duc de Malakoff, Grandeur à Merveille, Emmeline, Mrs. Beecher Stowe, Alba maxima, Queen of the Netherlands, Ornement de la Nature, Marie, Grand Lilas, Ida, Mirandoline, Baron Von Tayll, General Havelock, Florence Nightingale, Charles Dickens, blue, and Macaulay. The above were so remarkable for the excellence of the spikes, that it would be mere repetition to remark on each particularly. Mr. Davies, of Liverpool, was third with an excellent collection, consisting mostly of kinds already named; and Mr. Turner, Mr. W. Cutbush, and Mr. Hawkins, also exhibited in this class. Messrs. Van Waveren had in this class also a fine exhibition of Hyacinths in glasses, and it may be useful to note the names of the kinds. These were—Mina, white; Argus, Solfaterre, L'Eclipse, Amphion, Mont Blanc, Regina Victoria, General Lauriston, beautiful dark violet; Laurens Koster, Uncle Tom, Madame Marmont, porcelain; double Lord Wellington, Charles Dickens, Paarlhoet, Mimosa, and Queen Victoria. The only two not good were Heroine and Prince of Waterloo.

In Class 2, for eighteen red Hyacinths, Messrs. Cutbush took the first prize for Von Schiller, Duchess of Richmond, Cynthia, double Duke of Wellington, Milton, Lady Sale, Prince of Orange, Hogarth, Princess Clothilde, Gigantea, Florence Nightingale, Macaulay, La Prophete, Solfaterre, Mrs. Beecher Stowe, Susannah Maria, Ornement de la Nature, and Cavaignac, all of which were very fine. Mr. W. Paul exhibited Von Schiller, Princess Clothilde, Annie Lisle, splendid bright crimson; Prince Albert Victor, fine; Reine des Jaenthes, Noble par Mérite, Linnæus, crimson, very close spike; Princess Helena, and some others, very remarkable for their excellence.

In the Amateurs' class for six distinct kinds, Mr. Weir, gardener to Mrs. Hodgson, The Elms, Hampstead, was first; Mr. Potter, gardener to B. Noakes, Esq., Highgate, second; and Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park, third. A great improvement was visible in this class over the exhibitions of previous years, and there were really excellent examples of Charles Dickens, Grand Lilas, Von Schiller, Gigantea, Mimosa, &c. In the class for the same number grown in windows, the prizes went to B. Noakes, Esq., Miss Wilding, Chesterfield Street, Fuston Square, and Mr. James, Highgate, who each exhibited good well-formed spikes, especially the first two.

There was in addition a class for new Hyacinths, notes on which, as well as some other subjects, will be found further on.

Following the order of the schedule, Narcissi came next, and of these the best six were from Mr. W. Paul, and consisted of Lord Canning, yellow, with an orange cap; Her Majesty, white, with an orange cap; Queen of the Yellows, pale yellow, with an orange cap; Queen of the Netherlands, white, with a yellow cap; Grand Soleil d'Or, yellow, with a rich orange cap; and Gloriosa, white, with a large yellow cap. Mr. Turner was second with Bazelman Major, Bathurst, yellow, with an orange cap; Gloriosa, Medio Inteo de France, white, with a yellow cap; Grand Monarque, white, with a pale yellow cap; and Belle Princesse, yellow, with a reddish orange cap. Mr. W. Cutbush, of Barnet, was third.

Tulips were not numerously shown, and were not equal to what have been seen in previous years, when they formed an important feature at this show. They appear to be very backward this season—a remark which holds true of many other plants under glass. For six

kinds Messrs. Cutbush were first with *Rose Applatie*, white and pale rose; *Van der Neer*, *Coleur Cardinal*, *Proserpine* broken, *Keizerskroon*, and *Buttercup*, a showy yellow. Mr. W. Cutbush, of Barnet, was second; Mr. W. Paul third. The last named had *Le Matelas*, silky rose, with pale delicate edges, very pleasing, and *Superintendent*, white, feathered with purple. Mr. Turner, of Slough, also sent some pretty kinds. The only exhibition in the amateurs' class came from Mr. Steel, of Hammersmith, and being excellent was awarded a first prize.

Crocuses, likewise, were not numerous, and though some very good pots were shown, the collection as a whole was not remarkable for quality. Albion, Caroline Chisholm, and Mammoth were the best whites; and of purple, blue, and striped kinds, *Perfection*, *Prince of Wales*, *Sir Walter Scott*, *Princess Alexandra*, *No plus Ultra*, and *Skyblue* were the most conspicuous for quality. Mr. W. Paul and Messrs. Cutbush were respectively first and second in the nurserymen's class, and Mr. Steel took a first prize in that for amateurs.

For six pots of *Lily of the Valley* prizes were also offered, but only three exhibitors came forward to claim them—namely, Mr. W. Cutbush, Mr. W. Paul, and Mr. Wheeler, gardener to Sir F. Goldsmid, who took prizes in the order in which they are named. The pots from Mr. Wheeler contained smaller masses, but the flowers were fine.

Of *Cyclamens*, Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, sent a splendid collection of seventy-eight pots, many of them containing from one hundred to two hundred blooms, throwing all other exhibitors of these beautiful flowers into the shade. Mr. Edmonds, of Hayes Nursery, and Mr. James, of Isleworth, were second and third respectively. Mr. Beck, of Covent Garden, sent a pot in which there were two colours of flowers, the inference being that they were from the same corm. Mr. Turner also exhibited a collection in small pots; and good *Primulas* were contributed by Mr. Wiggins, Mr. James, and Mr. Hawkins, who each took prizes. Mr. Wiggins also sent a few *Polyanthuses*.

Large miscellaneous collections of plants from Mr. Williams, of Holloway, and Mr. Bull, of Chelsea, received extra prizes. In that from the former were numerous *Orchids*, including the beautiful new white variety of *Lycaste Skinneri* and *Dendrobium glumaceum*, berry-bearing *Ancubas*, *Yucca filamentosa*, *Agave filifera*, *Dracenas*, *Cibotium regale*, *Anthuriums*, rare Ferns, and other fine-foliaged plants, together with *Heaths* and other flowering plants; while Mr. Bull contributed numerous *Palms*, *Dracenas*, *Rhopala aurea*, *Yuccas*, his remarkable pair of *Agave filifera*, which he may well style "matchless," though they match so well together, *Phoridium Colensoi* variegatum, *Urospatha splendens*, the beautiful *Adiantum farleyense*, *Lonchitis gibba* Belli, and other rare Ferns, as well as *Cypripediums*, *Odontoglossums*, and other *Orchids*, besides *Camellias*, and a host of plants of recent introduction, the whole forming a most interesting collection. Messrs. Downie, Laird, & Laing, and Mr. Turner, of Slough, sent some of the new *Coleuses* raised at Chiswick; and Messrs. Paul & Son a group of *Orange trees*, dwarf standard *Ancubas* in fruit, *Amaryllises*, and the new double crimson *Thorn*, also a group of *Roses*, together with some beautiful cut blooms, taking an extra prize. Mr. W. Paul also contributed a group of *Roses*; Mr. Ware, nurseryman, of Tottenham, baskets of spring-flowering plants; and Mr. Cannell, *Bicolor Pelargoniums*.

In addition to the other attractions of the Show, there was Mr. W. Paul's exhibition of spring flowers, which was combined with it, and which will be noticed separately.

THE anticipations that I had formed that owing to the special prizes offered by the Dutch growers, this would probably be the finest exhibition of *Hyacinths* ever seen, and that the competition for these prizes would be confined to nurserymen, have both proved correct; never have I seen such grand collections staged as those put up by Mr. Wm. Paul, and Messrs. Cutbush & Son, never was there a keener contest, and never had anyone cause to be prouder of his laurels than had Mr. Cutbush in carrying off the two first prizes offered by the Dutch growers. To gain a first prize in such a case is something, but to meet with a foeman worthy of one's steel, and yet pluck the laurels from his brow, is better still; nor need anyone who showed such collections as Mr. Paul be ashamed of holding second place. In characterising the two collections, I should say there was greater finish and refinement in Mr. Cutbush's, and perhaps more boldness in Mr. Paul's, while the foliage in the collection of the former was everything that could be wished, Mr. Paul's being rather longer, perhaps owing to stimulants being applied too soon, or to too much heat.

I must again repeat my conviction that, for the encouragement of *Hyacinth-growing*, it was a mistake to throw the whole sum into open competition; it would have set many to grow who were now merely lookers-on, to have made some prizes for amateurs. It is a matter of congratulation, too, to know that the Dutch growers were perfectly amazed at the show—indeed, went so far as to say they had never seen *Hyacinths* before. It is the same with them as with the *Rose-growers* of France—they supply us with the raw material, but in the manufactured article we beat them hollow, and one and all expressed themselves delighted at the triumphs of horticultural skill displayed in these and the *Cyclamens* of Mr. Wiggins and other growers.

There was one very satisfying matter for the general lovers of the *Hyacinth*, who are often deterred from exhibiting by the large prices annexed to some of the varieties, and that is, that by far the greatest

number of flowers in the winning stands were low-priced flowers. Such kinds as *Grand Lilas*, *Charles Dickens*, *Baron Von Tuyl*, *La Jeune Anne*, *Gigantea*, *Grandeur à Merveille*, *Queen of the Netherlands*, *Lady Sale*, and others of the same classes, which can be obtained from 3/4. to 1s. each, and probably much less when a number are bought, figured extensively in the various collections. True, there are some such as *Solfaterra*, *Ferne Khan*, *Ida*, *Duc de Malakoff*, &c., which are expensive, but there is little doubt that for a very moderate sum good collections that would, if well managed, be successful can be obtained, and so let us hope to see an increased stimulus given to *Hyacinth-growing* by this move of the Dutchmen, especially if it be followed up.

From *Hyacinths* I pass on to *Roses*. Messrs. Paul & Son and Mr. William Paul had collections both of pot *Roses* and cut blooms, and very beautiful they were. In pot *Roses* Messrs. George Paul had charming plants of *Gloire de Dijon*, *Victor Verdier*, *Souvenir d'un Ami*, *Fraçois Lacharme*, *Madame Fartado*, *Comtesse de Paris*, *Princess Mary of Cambridge* (beautiful), *Mons. Noman* (excellent), *Dr. Andry*, *Madame de St. Joseph*, *Mademoiselle Thérèse Levet* (very pretty), *Duke of Edinburgh*, a splendid *Rose* with peculiar scarlet tinge; *Horace Vernot* (good); *Celine Forester*, *Madame Victor Verdier*, and *Mario Bauman* (beautiful). In cut *Roses* they had four boxes of beautiful fresh blooms. Amongst the most noticeable were *Marguerite de St. Amand*, *Beauty of Waltham*, *Souvenir d'Elise*, *Maurice Bernardin*, *John Hopper*, *Louise de Savoie*, and *Souvenir de M. Portenair*, one of *Margotten's* new *Roses* of this year, and one which I thought highly of when I saw it, and in which I was informed to-day it has a peculiarly beautiful salmony tinge in the petals, which is quite novel. Mr. William Paul's cut *Roses* were also very beautiful, containing some of the choicest of the older beauties.

In new *Hyacinths* there was nothing remarkable. Mr. W. Paul had a first prize for a collection containing *Andromache*, red; *Purple Queen*, thin in the spike; *Dante*, confused; double *Diehlitz Sabalkansky*, *White Swan*, and *Hector*, the best, but none of them seemed to me improvements of existing kinds.

I have again to express my surprise at the miserable display of *Camellias*. There were three boxes of cut blooms displayed, but the greater number were the *Anemone*-flowered varieties, and there was not a good imbricated bloom in any of the boxes. There was also one collection of lanky, bad-coloured plants staged, but altogether it was quite a reflection on our horticultural skill or enterprise.

Of the *Cyclamens* it is impossible to speak in too high terms; Mr. Wiggins's were grand. He has hit upon a strain of spotted flowers which are very pretty, and his plants were marvels of growth, while Mr. Edmonds's collection had some flowers more richly coloured than any I had seen.—D., Deal.

FRUIT COMMITTEE.—*March 16th*.—G. F. Wilson, Esq., in the chair. Mr. Calver, gardener to Sir H. Cottrell, Bart., Garmans. Hereford, sent specimens of the Garmans Apple, which was considered the same as Fearn's Pippin. He also sent a seedling Apple, which, though handsome and well kept, was not remarkable for flavour. Mr. Whiting, of Deepdene, sent a dish of very handsome *White Spanish Onion*, perfectly sound and well kept. Mr. Melville, of Dalmeny Park, sent a collection of *Variegated Kale*, some of which are hybrids between the *Ragged Jack*, the *Red Dutch*, and the annual *Variegated Kale*. The cross between the *Red Cabbage* was the newest feature, and the Committee recommended Mr. Melville to continue his experiments in that direction.

FLORAL COMMITTEE, *March 16th*.—Rev. J. Dix in the chair. Thanks to the very kind supporters of the Tuesday meetings, the Messrs. Veitch, Mr. Williams, and others, the exhibition this day was attractive. The inclement weather and other causes may have prevented the usual display at these gatherings, but the Society has much to be thankful for that it has such staunch supporters in the exhibitors of interesting collections of plants.

Messrs. Veitch exhibited a large collection of plants, spring-flowering and others, and among them three seedling *Amaryllids* were awarded a special certificate. These had fine flowers, but not equal to those exhibited on previous occasions. Messrs. Veitch's collection of plants was awarded a special certificate. It would be too much to name the specimens, but we must notice the various coloured double-flowering *Peaches*, *Roses*, *Narcissus*, *Azaleas*, &c. Mr. Turner, Slough, sent a small seedling plant of *Azalea La Superbe*. Although but one flower was expanded it received a first-class certificate; this is one of the brightest red and shaded varieties yet seen. Mr. Williams, of Holloway, sent a collection of *Orchids*, which merited the special certificate awarded him.

Messrs. Smith, Dulwich, sent a collection of plants, the greater portion of which consisted of seedling *Cinerarias*. Four were selected for the Committee's opinion. One named *Royal Purple* received a first-class certificate; this plant is of great merit and very distinct, a deep purple with very conspicuous disc. Ino, another variety, white, with a perfect carmine belt, a fine flat flower, but with doubtful foliage, received a second-class certificate. Mr. Weston, gardener to D. Martineau, Esq., exhibited two seedling *Azaleas*, *Enoch Arden* and *Lucius*, far below the standard of the present day. Messrs. Henderson, Wellington Road, sent very beautiful variegated plants of *Spiraea*, or *Hoteia japonica*, an extremely neat and elegant plant, which received a first-class certificate. A special certificate was awarded for the col-

lection containing *Phormium tenax variegatum* and some very fine varieties of *Trichopilia nanus*.

Mr. William Paul exhibited his new *Hyacinths*. It can well be imagined that a difficulty would be found in finding something distinct and new in these flowers. One named *Hector*, of a light grey colour, with huge bells, a distinct shade of colour, though too nearly resembling some of the good old varieties, was awarded a first-class certificate. *Dante*, a double dark blue; *Andromache*, a counterpart of *Von Schiller*; and *Double Diebitz Sabalkansky*, in their present appearance were unworthy of distinction. Mr. Woodward, gardener to Mrs. Torr, Ewell, was awarded a special certificate for a well-cultivated plant of *Trichopilia snavis*. Messrs. Ivory, Dorking, sent two seedling *Azaleas* of a bright rose colour. These were *Emma Ivory*, very promising, and it was requested it should be sent again; and *Rosa Ivory*, not equal to the kind first named. Mr. James Atkins sent a plant of *Triteleia* with pale blue flowers as a distinct variety, but it seemed to be the opinion of the authorities it was simply *T. uniflora* of another shade of colour. Mr. W. Paul sent two variegated-foliaged *Tulips*, which were considered of no importance, this variegation not being uncommon with the *Tulip*. Mr. Gibson, of Battersea Park, sent a small collection of succulent plants, which was awarded a second-class certificate.

GENERAL MEETING.—J. Bateman, Esq., F.R.S., in the chair. After the election of fifteen new Fellows, and the admission of the Western (Plymouth) Horticultural Society into union, the Committees' awards were announced; and in doing so, Mr. Wilson remarked that the conditions under which the large Onions shown had been produced, were deep trenching, heavy manuring, and February sowing, and that they had been kept on a dry floor.

Mr. Fortune, having been called upon by the Chairman, read his paper on the Kumquat, of which the following is an abstract:—

"It is now rather more than a quarter of a century since I had the honour of being sent out to China in the service of the Society. Before that time (1842), China had been all but a sealed-up country to the rest of the world. Amongst other plants which I discovered and introduced while on the mission was the *Citrus japonica*, or Kumquat, the plant whose fruit was exhibited by Mr. Bateman at our last meeting. I found it cultivated over a large tract of country in China, but it was evidently most at home in the more temperate parts, such as the islands of the Chusan Archipelago. Here large plantations were met with on the slopes of the hills, and very beautiful they appeared in autumn, winter, and spring, covered with their golden-coloured fruit, and deep green leaves. The fruit is much liked by the natives, who eat the skin as well as the pulp. Its chief value, however, is when used as a preserve. A large quantity is exported annually to Europe and America, preserved and sent home in nearly the same way as the better-known China ginger. Such shops of those of Fortnum & Mason in Piccadilly have always a supply. I believe some of the Fellows of the Society tasted the preserve in this room about two years ago, when Mr. Bateman also exhibited fruit which had ripened in his garden. In a horticultural point of view, however, in this country, we must look at the Kumquat as an ornamental plant only, and I think if our gardeners would set about its cultivation in the right way, they would find it easy to grow, and that it would amply repay them by being one of the most ornamental plants for winter decoration. I believe that a knowledge of climate and other circumstances relating to a plant's natural habitat is of the first importance to be successful in its cultivation in this country. An All-wise Providence has formed the animals and plants of our globe for those situations on the earth's surface on which they have been placed. The Indians, the Malays, and the Chinese flourish under the rays of a fierce sun, which would prove fatal to the inhabitants of a more northerly climate. Some plants, as the Fir tribe, flourish on the mountains, or hill sides, while others, of which Rice is an example, must be grown in water. The Cocoa Palm is always found on land near the sea shore. The Banyan tree luxuriates under a tropical sun, but would perish in a country like ours. Then again the plants of cool or temperate countries require a cold winter, when they can shed their leaves, and have a season of rest. The period of rest required by plants in certain tropical countries, such as Bengal for example, is not given them by cold, but by heat and the dryness of the atmosphere, and to give only one example of the natural law, I may mention a class of plants whose nature it is to be in a climate which is warm and moist all the year round. The Mangosteen which has justly been called the 'King of Fruits,' the Nutmeg, and many other productions indigenous to the islands of the Eastern Archipelago, will only succeed in such a climate as we find in that part of the world. It is always summer there, and rain falls in heavy showers almost every day throughout the year. Here, then, is a wide field for study, in which practical horticulturists would do well to labour. For what do we really find if we enter an ordinary hothouse in some of our English gardens? We find plants of most of the countries to which I have alluded, which have been formed for, and which occupy, situations on the earth's surface so widely different, crowded together in one house, where they are treated much in the same manner as if their nature and requirements were of a like character. Need we wonder at the result of such treatment? It is to this unnatural mode of treatment we attribute the loss of so many valuable Orchids, which we are now re-introducing at great expense. I may mention as an illustration of the subject, a circumstance relating to the cultivation of the tree Peonies in China. This beautiful plant is a native of the more northerly part

of the Chinese Empire, where the winters are extremely cold. Large quantities of it are brought south to Canton and other large towns every autumn, where it blooms well the first year, but the first year only. The winter is too warm for its constitution, and if its cultivation is further attempted in the new climate, it only dwindles away, and eventually dies. In practice, the Chinese simply throw the plants to the rubbish heap when the blooms fade, and order from the north a fresh consignment every autumn.

"I will just add a few remarks on the cultivation of the Kumquat in this country. From what I have stated of its native country, you will naturally come to the conclusion that it is a much hardier plant than the common Orange. In the country where the Kumquat is found in the highest perfection, the common Orange will not survive the winters. And, on the other hand, the Kumquat when cultivated in the south of China does not succeed, although the common Orange is found there in the greatest perfection. The cold winters of the north, which kill the Orange, are favourable to the constitution of the Kumquat. Both plants require warm summers, indeed the northern summer is frequently better than the southern one. A hot summer temperature ranging from 80° to 100° Fahr. is necessary to enable the Kumquat to form its growth and ripen its new wood. In winter it will bear without injury from 10° to 15° of frost, and perhaps even a lower temperature than this. There ought to be no difficulty in cultivating the Kumquat in England. If we wish to have it in high health and vigour, we must keep it cool and rather dry in winter. During its season of growth in summer it ought to have a liberal supply of water, and a temperature of from 80° to 100°, and this heat should be kept up even in autumn, in order that the young wood may be well ripened."

The Rev. M. J. Berkeley then addressed the meeting, and adverted in the first place to the singular effect of grafting the variegated *Abutilon Thompsoni* on the green-leaved *A. striatum*, the result being, as shown at a previous meeting, that the stock had thrown out a variegated shoot. Since then M. Lemoine, of Nancy, had published an account of a similar occurrence after grafting the same plant on *A. megapotamicum* and *A. venosum*, variegated shoots being in both cases thrown out by the stocks. The subject was one of considerable interest, and it was to be hoped that it would be further investigated. With regard to the white-flowered *Leucocoryne alliacea*, from Mr. Atkins, of Painswick, it was so nearly like *Triteleia uniflora* in structure, that the two could hardly be said to differ, except in the flowers of the *Triteleia* being of a more decided blue. The *Triteleia* was a valuable spring-flowering bulb in the open air, to which the only objection was that the flowers had the smell of garlic. As instances of the effects of the late warm, dry summer, flowering specimens from Mr. Standish of several *Conifers* not generally known to flower in this country, were produced. Among these were several species of *Retinospora*, *Fitzroya patagonica*, *Lebocedrus chilensis*, and the three forms of *Cupressus Lawsoniana*, showing the plant to be monœcious as well as dioecious. Mr. Berkeley, after exhibiting a flower of *Narcissus Sibthorpii*, a very rare species, of which the plant that bore the flower was derived from the Cambridge Botanic Garden, remarked on the peculiar interest and beauty of the genus, and stated that Mrs. Lloyd Wynne, of Coed Coch, proposed to give a prize, to be competed for in April, 1870, for the best collection of species of *Narcissus*.

Mr. Berkeley next remarked on the importance of protecting Peach and Plum trees not only from frost but heat, illustrating his observations by sections of wood from Chiswick. It was not an uncommon practice to protect the roots of such trees with tiles, but it was necessary to protect the trunk as well, especially the part where the bark joins the stock. Some of the specimens exhibited transverse cracks extending from the bark to the centre of the stem. It was a well-known fact that the whole effect of frost may not appear at first, that the tree may go on for three or four years, the injury be covered over, and yet the tree may eventually die. It was known that the medullary rays were continued into the bark, but in the transverse section of a Plum which was taken as an illustration, it was found that on one side there was the normal bark, and on the other an abnormal growth had been formed outside the true bark, and into that the medullary rays did not penetrate. On looking at the specimen minutely, he observed a slight fissure of the cuticular layer and an attempt to form fresh bark. This subject was one of great interest, and he should be extremely obliged if persons finding abnormal growth would submit them. We had been taught by Virgil's "Georgics," that cold often produces the effects of heat, and the moral of all this was, that we should protect our Peach trees more than we have been in the habit of doing.

Mr. Bateman said, as the Orchid field was not very large he would take occasion to bring before the meeting a truss of *Rhododendron Falconeri*, which he noticed in flower in the western approach, and though it was not the first time of its flowering in this country, it had never before exhibited itself in its proper beauty. It was one of the Sikkim species described by Dr. Hooker, with respect to the hardness of which we had been doomed to disappointment, for though passing our winters well they were in such a hurry to be off that they were nipped in the spring. He had also noticed in the western approach a young plant of *Rhododendron Nantali*, so beautifully flowered by Mr. Williams, of Holloway, some time ago, and it was particularly encouraging to find these *Rhododendrons* succeeding so well there, for a succession of them distinct in habit, foliage, and tint of flower might

thus be secured from February to May. Orchard-house trees had been tried there without success, Chinese *Pæonies* the same, but here, in *Rhododendrons*, there was every encouragement. The variegated New Zealand Flax was then mentioned as a plant peculiarly well adapted for filling a niche, and the connection between plants and architecture was also remarked upon. Architects ought to go through a horticultural course, and it was not till the time of London and Nesfield, that even landscape gardeners considered the fitness of plants for particular situations. Mr. Bateman then briefly noticed the beautiful *Dendrobium Wardianum* from Lord Lonsborough's garden, the richly-coloured *Trichopilia snavis* from Messrs. Henderson, and the specimen of the same plant from Mr. Woodward; also, *Lycaste gigantea*, with flowers on stalks much taller than in any of the genus, exhibited by Messrs. Veitch. In conclusion, he moved a vote of thanks to Mrs. Lloyd Wynne, expressing at the same time a hope that some of the nurserymen who had shown that magnificent region of *Hyacinths* on the previous Saturday, would enter the lists for the prize which she had offered.

MR. WILLIAM PAUL'S SHOW OF SPRING FLOWERS.

MR. W. PAUL unites the taste of the artist with the skill of the cultivator, for nothing can be more artistic than his arrangements, nothing more remarkable than the perfection to which he brings his plants. When we saw his arrangement of last year, we thought it the best that could be devised for the place; when we saw that which he has adopted this year, we thought it yet better; and when, as we hope to do, we shall see that of another year, so fertile is he in fresh combinations, perhaps we may think it better still. The north-western conservatory arcade, where his exhibition is held, from much of the room being taken up at the back, and from the necessity of preserving a sufficient space for the passage of visitors, does not in its present state afford width enough for large masses; and to overcome this difficulty Mr. Paul has placed plants of low growth, such as *Hyacinths*, *Crocuses*, &c., along the front of the arcade, so as to form a broad and brightly-coloured band of varying width, the line alternately advancing and retiring, and every so far broken by what may roughly be called salient half-octagons. At intervals plants of taller growth, as *Acacias*, *Azaleas*, *Coronillas*, &c., are introduced so as to take away all appearance of flatness, and then the height again gently sinks downwards. At the back of the arcade, or on the right hand of one entering from the end farthest from the conservatory, are groups of *Hyacinths*, *Roses*, and various flowering shrubs.

Starting from the end just named, on the right we find a group of *Roses*, among which we noticed *Madame Hoste*, beautiful deep pink; *Exposition de Brie*, *Aurore Boréale*, *Madame Alfred de Rougemont*, a free-blooming white Hybrid *Perpetual* which forces well; and *Horace Vernet*, light and dark crimson edged. On the opposite or left-hand side is a long line of *Hyacinths* shaded with *Crocuses*, *Cyclamens*, and Chinese *Primulas*; then a group of *Epicurises*, *Acacias*, &c. Passing onwards we come to a large raised group of *Hyacinths*, and opposite these, as there are very few yellow *Hyacinths*, yellow-leaved *Pelargoniums* and variegated *Euonymuses* are massed. Beyond these is a group of greenhouse *Azaleas*, *Narcissuses*, and other plants, and then a number of showy seedling *Cinerarias*, followed on the right by a group of flowering shrubs, noticeable among which were the *Praunus trilobata*, loaded with rosy button-like flowers, a most ornamental spring-flowering plant, and the new double crimson-flowering *Thorn*, much deeper in colour than the old pink, and excellent for forcing.

Onwards again, and we find a half-octagon of *Hyacinths* of mixed colours, with lines of red, white, and blue varieties of the same flower leading off right and left. Then comes a mass of *Bicolor* and *Tricolor Pelargoniums*, one of which, *Plutarch*, is remarkable for its broad black zone, fine golden edge, and free leafy habit, more vigorous than the generality of the Golden *Tricolors*. It is the result of a cross between one of Beaton's race and Mrs. Pollock. *Louisa Smith*, *Beauty of Calderdale*, and *Red Admiral* are conspicuous among the other kinds, some being grown as dwarf standards. To tone down what would otherwise be an excess of colour in the adjoining mass of *Hyacinths*, the silvery-leaved *Centaurea gymnocarpa* and *Euonymuses* are introduced. Then follow *Crocuses* and *Narcissuses*, the latter unusually fine this year, and on account of their delicate scent well worthy of more extensive cultivation. The best of the whites appears to be *Her Majesty*, white with a yellow cup, producing large clusters of flowers, and being of dwarfier habit than most of the other kinds; whilst *Newton* occupies the same position with regard to the yellows. In front of these are *Tulips* and a row of *Crocuses*. Other groups, right and left, consist of *Camellias*, *Acacias*, *Bicolor* and *Tricolor Pelargoniums*, *Azaleas*, *Pæonies*, *Epicurises*, &c., with lines of *Hyacinths*, *Crocuses*, and *Cyclamens*, a mass of *Camellias* on the left, and one of *Hyacinths*, edged with *Lachenalias*, on the right.

The exhibition of *Hyacinths* is beyond praise; nearly every spike is of the same noble dimensions as in the collections at the Royal Horticultural Society's Show, and as that has been fully reported on it would be superfluous again to enter into details. It may, however, be useful to give the names of the very best varieties of each colour as exhibited here, and these are, of the *Red* class—*Von Schiller*, Paul's *Garibaldi*, *Koh-i-Noor*, *Macanlay*, *Fabiola*, *Solfaterre*, *Vuurbaak*, *Gigantea*, *Grandeur à Merville*, and *Prince Albert Victor*. *Blue*—*King of the Blues*, *Lord Palmerston*, *Charles Dickens*, *Couronne des*

Blens, *Van Speyk*, *Garrick*, *Sir Lawrence*, *Laurens Koster*, *Baron Von Tuyl*, and *Grand Lilas*. *Black*—*Prince Albert* and *Fernack Khan*. *Yellow*—*Ida* and *Bird of Paradise*; and *Duc de Malakoff*, buff striped with red. *Duc de Luxembourg* has a very long spike, but the bells are tipped with green. *White*—*La Grandesse*, the best; *Alba Maxima*, and *Snowball*. *Mauve*—*Haydn*, and *Sir H. Havlock*, mulberry.

This fine Exhibition is worthy of Mr. W. Paul's talents and resources, and therefore we need scarcely add that it will amply repay inspection. It will continue open till the 20th inst.

ROYAL BOTANIC SOCIETY'S SPRING SHOW.

THIS was held on the 16th and 17th inst., and though far from equal in magnitude to the Show at Kensington on the previous Saturday, was, nevertheless, a neat little display. As many of the subjects had already appeared, and have been reported on, details respecting these may be omitted here.

In *Hyacinths* Messrs. Cutbush, of Highgate, took the lead in the nurserymen's class with beautiful examples of *Marie*, *Princess Helena S.W.*, *Ornement de la Nature*, *Queen of the Netherlands*, *Macanlay*, *Garrick*, *Grand Lilas*, *General Havlock*, especially fine; *Florence Nightingale*, *Gigantea*, *Ida*, and *Howard*. Mr. W. Cutbush was second in the same class with *Charles Dickens*, *Grand Lilas*, *Baron Von Tuyl*, and several of the preceding. Among amateurs, Mr. Potter, gardener to B. Noakes, Esq., of Highgate, was first; Mr. James, of Highgate, second; and Mr. F. Steel, of Hammersmith, third. In one of these collections as many as three of *Charles Dickens* were exhibited; it would be well, therefore, to add to the schedule that distinct kinds are required, otherwise in the same way an exhibitor might stage twelve of one sort, which we do not believe to be the intention of the words, "twelve *Hyacinths*," though meeting the requirements of the schedule to the letter. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., and Mr. Weir, gardener to Mrs. Hodgson, Hampstead, also exhibited in the same class.

For *Tulips*, of which, as at Kensington, there was but a limited number shown, Mr. Steel, Messrs. Cutbush, and Mr. W. Cutbush, of Barnet, were the prizetakers.

Of *Cyclamens* there was an excellent show, contributed by Messrs. Wiggins, James, and Edmonds, who stood in the prize list in the order named; and Mr. Wiggins also had a fine collection in the miscellaneous class, for which he received a prize. For Chinese *Primulas* he was also first with some of his splendid strain excellently grown; Messrs. Wheeler, James, and Boyce, being second, third, and fourth.

Of *Azaleas* there were some really good sixes shown. Messrs. Lane, of Berkhamstead, were first with well-bloomed plants, remarkably good for the season, of *Reine des Blanches*, *President Humain*, *Princess Alice*, white; and *Perfection*. Mr. Todman, gardener to R. Indson, Esq., Clapham Common, was second with *Concinna* and *Princess Bathildy*, purple; *Criterion*, *Princess Royal*, rose; *The Bride*, white; and *Duchesse de Nassau*, always showy by its splendid colour. These were also in very good bloom. Mr. Wheeler also sent good plants covered with flowers. *Camellias* were by no means remarkable. The best three plants came from Mr. Wheeler; Mr. Wilkie, Addison Road, Kensington, being second. For cent blooms the prizes went to Messrs. Todman, Wheeler, and Wilkie; Mr. Boyce and Mr. Edmonds were first and second in the nurserymen's class.

In the class for six fine-foliaged and flowering plants Mr. Wheeler was first with very good specimens of *Pandanus javanicus variegatus*, *Alcornoica metallica*, *Dicksonia antarctica*, *Chorozema cordatum*, and *Eriostemon intermedium*. Mr. Wilkie, who was second, had in his collection a large specimen of *Dendrobium nobile* in fine bloom.

Lilies of the Valley and *Cinerarias* were also exhibited; and of miscellaneous subjects there was a very good display, constituting, in fact, the larger part of the exhibition. Messrs. Paul & Son sent beautiful *Roses* in pots, for which they had a first prize, also *Oranges*, fruiting *Aucubas*, &c.; and Mr. Williams, of Holloway, had a similar award for a large collection, containing fruiting *Aucubas*, *Palms*, *Ferns*, *Orchids*, and a great variety of fine-foliaged and flowering plants, the whole forming quite a feature. Mr. W. Cutbush, Barnet, sent *Mignonette* and *Narcissuses*, quite perfuming the tent, as well as some *Heaths*; Mr. Turner, Coleus *Princess Royal*; Mr. Ware, herbaceous plants, including *Fritillaria imperialis* with yellow-striped leaves; and Messrs. Lane & Son, *Rhododendrons* in fine bloom, *Dentzias*, and fruiting *Aucubas*.

Among new plants Mr. Williams had *Solanum rigidum* with large yellowish orange berries, his beautiful white *Lycaste*, *Passiflora trifasciata*, *Asplenium adiantum nigrum grandiceps*, and other plants recently shown before the Floral Committee. Lastly, Messrs. Paul and Son had *Diecivilla cheshuntensis*, producing an abundance of red and purplish rose flowers, and which promises to be a useful decorative plant at this season.

THE HAMBURG INTERNATIONAL HORTICULTURAL EXHIBITION.

—A meeting was held at South Kensington on Tuesday last to form a Committee for the purpose of promoting the objects of the Hamburg International Horticultural Exhibition in England. There were present Rev. M. J. Berkeley, Mr. Moore, Dr. Hogg, Messrs. C. Lee, Harry J. Veitch, Thomas Osborn, George Eyles, &c. Letters were read from Sir Wentworth

Dilke, Mr. Rucker, and Mr. J. Fleming regretting their inability to attend. The Rev. M. J. Berkeley was elected Chairman, and Mr. George Eyles Secretary.

OPENING THE CONES OF THE LEBANON CEDAR.

PERMIT me to direct the attention to all those who are interested in arboriculture to the splendid crop of cones which these trees are now bearing. All Cedars do not bear fruitful ones, but many contain excellent and numerous seeds.

The cone of the Cedar is remarkably tough, and will not discharge its seeds by exposure to heat like those of other Firs. I have tried various methods of extracting the seeds, and find the following the most effectual:—Fix the cone in a vice, and saw off about three-quarters of an inch top and bottom; then with a mallet and cold chisel divide the cone into quarters, which must be separated into smaller portions. Place these in the kitchen screen for say twenty-four hours, and they can then be separated without much difficulty. If very tough use a pair of wire nippers to open them. A good cone contains from forty to sixty seeds.

It is remarkable that though the Cedar is so prolific this year the *Pinus austriaca* has no cones, but it bore so heavily the two previous years that I have not only young trees of this species growing from trees of my own planting, but have sent considerable quantities of seed to friends and some nurserymen.—HIGFORD BURR, Aldermaston.

THE PORTABLE ORCHARD.

(Continued from page 161.)

HAVING, then, a nursery of stocks, procure the scions of the sorts you wish to propagate at least a month before the grafting season. The best time for grafting is usually the first half of April; but in early seasons and localities an earlier date is better. As far as my experience goes I have found it safer to work as late in the season as possible; but I must also remind my readers that I live in a cold climate, and the soil is very tenacious, so that I have to guard very carefully against all checks to vegetation. The stock should be on the point of bursting its leaf buds, but the scion must have them much less advanced for ordinary out-of-door work. To secure this difference of development the scions are cut off a month at least before the time of using them, and may be cut off as soon as the leaves have fallen. They require to be kept from drought and frost, and the common way of storing them is to tie each sort in a bundle, and put it two-thirds of its length in the ground in the open air, under a north wall or other shade from the sun. This "laying in by the heels" I never practise myself now, for it gives much trouble in cleaning the scions when they are required for use. The best way of keeping them is to put them overhead in cocoa-fibre refuse in flower pots, storing the pots in a cool cellar or outhouse, and taking care that the fibre is neither dry nor wet, but only thoroughly damp; scions so stored will keep perfectly sound for a very long time, frequently striking root, and always forming a callosity at the base. Sand used in the same way answers very well, but it is apt to damage the knife if any is left when the scion is being shaped; the cocoa fibre shakes off, leaving the wood quite clean.

I may also mention what occurred to me three years ago with regard to some scions, as it may be a useful hint when they are sent from a distance. A friend sent me some, and they were left at an inn, and forgotten for three weeks. Being merely wrapped in a piece of paper they were dried up and brittle. I thought them quite killed, and wrote to tell my friend of the misfortune; but after writing to him I thought I would try a plan I learned when a boy for freshening up cut flowers sent from a distance. This plan is to burn to a cinder about an inch of the lower ends of the stalks, and then place them instantly in cold water, leaving the burnt pieces on, and placing the glass containing them in the dark for a short time. Violets sent in a letter will generally revive under this treatment, and Rose buds will expand as if they were on the tree. My dried scions were so treated and put into the dark all night, and to my surprise the next morning they were quite fresh, and when used every one of them grew.

In sending scions from a distance, when the quantity is small I always post them, but pack them with damp rag, cotton wool, or cocoa fibre, in a piece of thin sheet gutta percha, such as can be obtained at any druggist's shop. To send them safely to great distances, as to America, it is necessary to pack them

with damp cocoa fibre, or some such material, in tin cases. I feel sure that if an ordinary biscuit tin were filled up with scions and cocoa fibre, and soldered up, it would keep them perfectly fresh for six months.

The scions are cut from thoroughly-ripened shoots of the preceding summer; where it can be done, a piece of the previous year's wood should be cut off along with the new, for if the scion is fitted so that the junction of the two-years growth is applied to the stock, a much larger portion of the living tissue is brought into contact. Some kinds of trees require the second year's wood to be taken for the scion, and although the fruits we are dealing with do not, I would rather have a scion of the second year's wood than a badly-ripened shoot of the previous summer. The buds on the scion must be leaf buds, and the plumper they are the better. Avoid all those succulent shoots commonly seen on the stems of old orchard trees; you may, of course, have no choice, and to preserve some favourite variety you may be driven to use flower buds, but the rule is to choose well-ripened shoots with well-developed leaf buds. We shall presently have a full consideration of the distinctions that mark leaf buds and flower buds, at present I must take it for granted that you have proper scions.

We now come to the tools required; they are very simple—a very sharp knife, some matting or yarn for tying, grafting wax or clay to cover up the joint, and do not blame me if you take rheumatism in the knees through not following my advice, to be most cautious in never kneeling on the bare ground; always use a piece of waterproof cloth, or a hassock, or you may get a stiff knee through your imprudence; a rifleman's kneeling pad is an excellent protector.

As the knife must be in first-rate condition for the most delicate part of the operation, it should never be used for rough work, so use another for cutting off the heads of the stocks and any other preliminary trimming. Knives for the purpose are sold by all nurserymen and seedsmen. The common form of budding knife is that to be kept for delicate work, the hooked form is the best for cutting stronger branches.

The cotton used for the wicks of dip candles is first-rate for tying, and it can be procured from any candle maker. The Japanese bast is most excellent when grating clay is used, because it rots away in about the time it is necessary for the ligature to be removed. Some persons use worsted, some a soft strand of rope yarn; but I have found the cotton wick and the Japanese bast, used quite dry, by far the best and pleasiest materials.

The receipt for the grafting wax or mastic, and the grafting clay, will be given further on.

Various modes of grafting are adopted for particular purposes. For our present purpose three only are needed—*whip or tongue grafting*, crown grafting, and shield grafting, or budding, as it is more commonly designated in this country. The first two are performed early in spring, the other most commonly in summer.

All the books in which I have found a description of grafting seem to me to be very defective in more than one particular, and I shall endeavour to make the matter perfectly clear at the risk of being tedious. A glance at the figures will explain to any experienced gardener all that is new.

Cut down in the autumn all the stocks that are to be grafted in the spring, and any branches of larger trees that are to be grafted afresh, leaving in every case about three eyes beyond the part where the scion is to be placed, at the same time trim off any laterals that require removing. This cutting-back in autumn prevents the check that would otherwise be given to the stock were it cut back after the sap had begun to move. Then, as soon as the buds which have been left are on the point of opening, choose a day that is calm and warm; if there has been rain shortly before all the better. If the season has been very dry water the stocks well a week before you intend grafting. Take the scions you are about to use in a basket or box, covering them over with damp cocoa fibre or sawdust. Begin at one end of a row of stocks, kneeling down in the 3-feet space with your back towards the other end of the row, so as to move backwards, keeping your face towards the work done, and then you will not break off the scions you have already inserted. Put a label, having written on it indelibly the name of the sort of scion you are about to use, or a number referring to it, on the first stock, and every time you are about to use a new variety of scion put its label on the stock before you graft it. Attend to this advice. Where the number is considerable you must keep a book in which to register the sorts, according to the rows and numbers in each row. Now cut off the top of the stock down to a dis-

tance of 3 inches from the ground, or thereabouts, less rather than more. The cut should be made by putting the edge of the sharp knife just opposite to a bud and bringing it out an eighth of an inch or so above the bud, making the cut quite clean and even, with a very gentle slant, 1 (fig. 1). Next put the knife to a point about an inch below the place where it was first applied, and cut a thin slip upwards, 2 (fig. 2). This slip should remove the bark and a small portion of the wood, but it ought, as far as possible, to be a section of that layer of living tissue which throws off a ring of wood on one side, and a ring of bark on the other; the size of the scion, however, must be the principal guide as to the thickness of the slice cut off, and it is here

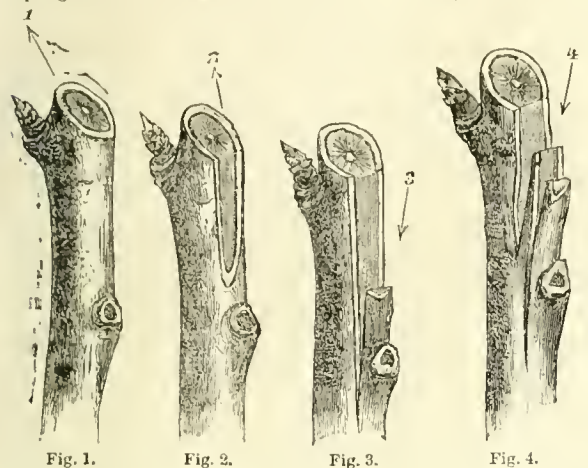


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

that correctness of eye is of so great importance. Next reverse the direction of the edge of the knife, and run it downwards, beginning at the bottom of the last cut, and keeping the slip the same size, so as to form a flap about an inch long, 3 (fig. 3), and then, again, if the scion be not very small, make a second downward cut, 4 (fig. 4), starting about half an inch from the top of the stock, and about three-quarters of an inch long. These four cuts are numbered in order in the figures, and the barbs show the direction in which they are made. With practice you will make them in about as many seconds. This is all the preparation needed by the stock.

We now come to the scion. If it has been well kept the base will be perfectly sound, and most likely will have a large callosity formed from the wound. If it is one having a piece of the second year's wood, cut it through an inch below the junction of the two years' growth, and cut it through again above the third bud above the junction. Commonly this will leave you a shoot about 4 or 5 inches long. Now look out for the lowest of these three buds, A (fig. 5), and putting your knife from an eighth to a quarter of an inch below it, bring the cut out at the base at the opposite side, forming the bottom of the scion into a wedge, 1; secondly, make a

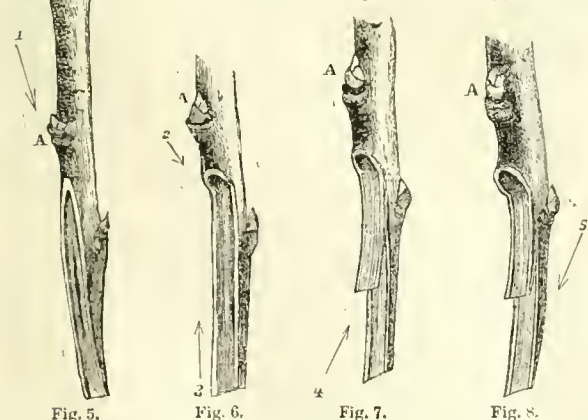


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

cut, beginning at the same point as before, and slanting exactly the same as the top of the stock, 2 (fig. 6). A little practice

will teach you to make this slope always at the same angle; it matters very little what the amount of slope is, provided it is not a violent one. The depth of this cut must depend upon the thickness of the stock and scion. If the scion is small, and the stock moderately small, this cut should go nearly half through the scion; if the scion is nearly as thick as the stock, the cut should go just half through; but if the stock is much larger than the scion, the cut should go more than half through, just beyond the pith. Thirdly, reverse the knife, and beginning half an inch from the base, make a cut upwards, 3 (fig. 6), to meet cut 2. Fourthly, if the scion is thick enough, make another cut upwards, 4 (fig. 7), beginning a little below the middle of the wedge to form the tongue to fit into the opening made in the stock by its cut No. 4 (fig. 4). Lastly, cut a thin slip from the opposite side, about an inch long, ending at the base, 5 (fig. 8). —W. KINGSLEY.

(To be continued.)

THE AUCUBA JAPONICA.

HAVING seen in the Journal of March 4th several remarks and queries as to the management of the Aucuba, I will state how successful our management of it has been here.

In the grounds at this place are many large plants of the old *Aucuba japonica*. Last year one small plant of the male *Aucuba* was placed on an inverted Sea-kale pot, close to one of the old plants. It remained there perhaps for a fortnight; it was then removed for only a few days to some young plants of *Aucuba*, under the trees in the fine old avenue here. The bush near which the male plant was first placed has now upon it a profusion of large brilliant scarlet berries. The plant in the avenue had only a few, which have been gathered to preserve for sowing; but near these smaller bushes (distance perhaps about 100 yards), is a fine old plant with a very considerable number of the fruit upon it. I have no recollection of having placed the male plant near this large old one at all. If this be so, the pollen must be carried by bees, and to a considerable distance. At the time the bush near which the male plant was first placed was in flower, the old plant was much covered with a greenish metallic-looking fly, which no doubt tended much to facilitate impregnation. This year the male plant is already in flower; it was unfortunately placed under a warm wall in the kitchen garden. The old female plants have a profusion of buds, but these have not yet opened. I have every reason, however, to hope that they will be in blossom before the male blossoms are over.

With regard to the propagation of the *Aucuba*, I believe from experience that it is as easily propagated in the spring as the common Laurel.

I hope, also, that birds do not very much like the fruit; several of the berries here have fallen, but they are becoming over-ripe. Some of these appear as if they had been attacked by birds, but they certainly are not a favourite food, for almost touching the *Aucuba* plant, now brilliant with its scarlet berries, is a Holly bush, the nightly roost of hosts of sparrows. If they had liked the fruit, the *Aucuba* plant would have been stripped; but, certainly, this has been a most unusually mild winter, and food for the feathered tribe has been plentiful. —N. E. OWEN, Gardener to W. W. Wynne, Esq., Peniarth, Towy, Merioneth.

EAST LOTHIAN STOCKS.

I VERY much doubt if your correspondent "G. S.," even after taking the precaution of sending to Edinburgh, has obtained genuine seed of these Stocks. I had considerable acquaintance with what are now called East Lothian Stocks, for several years previous to their acquiring such an appellation, or to their being in the hands of the trade, and my experience of these is quite in accordance with all that has been stated in their favour in THE JOURNAL OF HORTICULTURE. I am sorry to say, however, that there is a spurious and worthless variety of the scarlet in the trade (the scarlet, by the way, being of much older introduction than the purple and white), and like your correspondent, I had few flowers upon it. Not so, however, with the true varieties, the seed of which was of my own saving. The purple and white varieties sent me from Edinburgh were perfectly true, as I grew them side by side with others that I knew to be genuine.

Last year I sowed the seeds of these Stocks at the end of February, and planted them in the open borders early in May. A few plants commenced to bloom at the end of June; nearly all, excepting the scarlet variety before mentioned, were in

flower a month later, and were quite gorgeous during the autumn months. The locality is a late and damp one.—J. A., *Wallhouse Gardens*.

PLANTS IN FLOWER FEB. 11TH. TO MARCH 1ST.

AT DRAYTON-DEAUCHAMP RECTORY.

<i>Anemone sylvestris</i>	<i>Muscari botryoides pallida</i>
<i>bortensia</i>	<i>moschatum</i>
<i>coronaria</i>	<i>macrocarpum</i>
<i>pavonia</i>	<i>Narcissus pulchellus</i>
<i>ranunculoides</i>	<i>maximus</i>
<i>Aubrietia purpurea</i>	<i>luna</i>
<i>purpurea variegata</i>	<i>pumilus</i>
<i>Arabis alba</i>	<i>odorata</i>
<i>blephorophylla</i>	<i>pseudo-narcissus</i>
<i>Alchemilla vulgaris</i>	<i>plenissimus</i>
<i>Bulbocodium vernum</i>	<i>cernuus plenius</i>
<i>Berberis aquifolia</i>	<i>biflorus</i>
<i>Darwinia</i>	<i>Tazetta</i>
<i>Calendula officinalis</i>	<i>polyanthus, yellow</i>
<i>Coronilla glauca</i>	<i>Omphalodes verna</i>
<i>Crocus biflorus</i>	<i>Orobis vernus</i>
<i>aureus</i>	<i>Ornithogalum exscapum</i>
<i>Aucherii (chrysanthus)</i>	<i>Platystemon californicum</i>
<i>susianus</i>	<i>Primula altaica</i>
<i>sulphureus</i>	<i>auricula</i>
<i>nivalis (Sieberi)</i>	<i>denticulata</i>
<i>vernus</i>	<i>elatior, various</i>
<i>versicolor</i>	<i>veris</i>
<i>Sir Walter Scott</i>	<i>vulgaris, various</i>
<i>Pure white</i>	<i>Scilla ibirica</i>
<i>Cyclameum coum</i>	<i>bifolia</i>
<i>Cheiranthus cheiri, various</i>	<i>bifolia alba</i>
<i>Dendia epipactis</i>	<i>Sisyrinchium grandiflorum</i>
<i>Daphne mezereum</i>	<i>Saxifraga cymbalaria</i>
<i>Doronicum caucasicum</i>	<i>Trileteia uniflora</i>
<i>Epimedium grandiflorum</i>	<i>Viola odorata</i>
<i>Erica herbacea</i>	<i>odorata alba</i>
<i>Eranthis hyemalis</i>	<i>odorata, Early Russian, blue</i>
<i>Erysimum helveticum</i>	<i>odorata cerulea plena</i>
<i>Galanthus nivalis</i>	<i>odorata alba plena</i>
<i>flora-plena</i>	<i>Czar</i>
<i>plicatus</i>	<i>Queen</i>
<i>Helleborus atrorubens</i>	<i>Giant</i>
<i>foetidus</i>	<i>neapolitana</i>
<i>colchicus</i>	<i>tricolor, various</i>
<i>olympicus</i>	<i>Viburnum tinus</i>
<i>niger</i>	<i>Dentaria digitata</i>
<i>Hepatica angulosa</i>	<i>Draba aizoides</i>
<i>triloba alba</i>	<i>Malcolmia maritima</i>
<i>cerulea</i>	<i>Matthiola incana</i>
<i>rubra</i>	<i>Trichonema columnne</i>
<i>rubra plena</i>	<i>Ficaria aurea plena</i>
<i>Hyacinthus orientalis</i>	<i>Erythronium deus-canis</i>
<i>belgicus</i>	<i>Vinca minor alba</i>
<i>Jasminum nudiflorum</i>	<i>Bellis perennis (double white)</i>
<i>Lamium maculatum rubrum</i>	<i>Iris persica</i>
<i>Leucojum vernum</i>	<i>Erodium hymenodes</i>
<i>Muscari racemosum</i>	<i>Forsythia viridissima</i>
<i>neglectum (?)</i>	<i>Potentilla alba</i>
<i>botryoides</i>	<i>Coronilla emerus</i>

—H. HARPUR CREWE.

ADDITIONAL PLANTS IN FLOWER AT BITTON VICARAGE.

MARCH 3RD.

<i>Forsythia suspensa</i>	<i>Symphytum, white</i>
<i>Berberis Bealii</i>	<i>Narcissus propinquus</i>
<i>dulcis</i>	<i>bicolor</i>
<i>Anemone apennina</i>	<i>aurantius plenus (Butter-and-Eggs)</i>
<i>Corchorus japonicus</i>	<i>lacticolor</i>
<i>Lonicera fragrantissima</i>	<i>cernuus</i>
<i>Tassilago fragrans</i>	<i>plena</i>
<i>Scopolia carniolica</i>	<i>biflorus</i>
<i>Pyrus japonica, red and white</i>	<i>White Polyanthus</i>
<i>Vinca major and minor in vars.</i>	<i>Helleborus orientalis</i>
<i>Borago orientalis</i>	<i>trifolius</i>
<i>Pulmonaria officinalis</i>	<i>dumetorum</i>
<i>officinalis alba</i>	<i>viridis</i>
<i>Gorse, double and single</i>	<i>Ficaria, white</i>
<i>Garrya elliptica</i>	<i>Saxifraga ciliata</i>
<i>Chimonanthus fragrans</i>	<i>oppositifolia</i>
<i>Peach, Nectarine, Apricot, Plum</i>	<i>Iberis sempervirens</i>
<i>White Banksian Rose</i>	<i>Eurybia eminus</i>
<i>Spiraea prunifolia plena</i>	<i>Akebia quinata</i>
<i>Iris tuberosa</i>	<i>Daphne indica hybrida</i>
<i>stylosa</i>	<i>Fioniana</i>
<i>Primula marginata</i>	<i>Erodium romanum</i>
<i>Cyclamen ibericum, purple and white</i>	<i>Scilla amoenula</i>
<i>Spider Orchis (Mentone)</i>	<i>bifolia rubra</i>
<i>Aubrietia græca</i>	<i>italica</i>
<i>Lencocoryne alliacea</i>	<i>Ornithogalum nutans</i>
<i>Anemone Hudsoniana</i>	<i>Cheiranthus mutabilis</i>
<i>Sanguinaria canadensis</i>	<i>Claytonia virginica</i>
<i>Ilyoscyamus orientalis</i>	<i>Adonis vernalis</i>
	<i>Dianthus chinensis hybridus</i>

COATING SEEDS WITH RED LEAD.

With reference to the advice in "Doings of the Last Week," page 164, to coat seeds with red lead, I think it right to warn your readers that plants have been proved to absorb lead into their tissues when grown in soil containing this metal, and as it

is a poison that accumulates in the system, it is not very safe to treat seeds of vegetables in the manner described.—A. O. W.

[We are very much obliged by this communication, and the more because written by a gentleman largely interested in the manufacture of lead; but we think his fear is groundless, for red lead, or, as known in chemistry, the red oxide of lead, is totally insoluble in water or even in acids, and consequently cannot be absorbed by a plant's roots. This is not the case with the grey oxide which forms on the surface of lead exposed to the air. This grey oxide is soluble in water, and then is capable of being absorbed by the roots of plants.—EBS.]

GARDENING IN TOWNS.

OF summer flowers that bloom tolerably well during summer, though I have tried a great many varieties of Pelargoniums, I find very few that will bloom. They grow freely in the smoke, but do not bloom. Of Stella, Christine, Silver Chain, and Trentham Scarlet I take cuttings off the old plants in September, and put in 3-inch pots in loam and a little silver sand, and put them in cold frames, shade them for three weeks in the middle of the day, then take off the glass, and give them a little water, and keep them out of doors till November, if the frost does not set in too sharp. I then look to the drainage, and see it is all right, then house for the winter in a span-roofed house I built myself, 4 feet under ground and 4 feet above, with the old-fashioned brick flue. I scarcely lose a plant, as I give plenty of air all the winter, and a little heat at night. I stop them in March, and pot into 4-inch pots till bedding-out time. By thus treating them they bloom very well. The compost in borders and beds is half fresh loam from the country, one-fourth rotten dung mixed with the common border mould well trenched up. The old roots I dig up in October, or the end of September, and pot them in 5-inch pots, with good drainage, and do not cut the green shoots at all, or they mildew and die. I cut off nearly all the leaves, and give very little water through the winter. By this treatment I generally save three parts of the old plants, and they do very well for bedding and borders, and bloom freely for two years. After that time I throw them away. They require to be planted deep, or they show a long stem. By cutting in the old plants in the spring I do not obtain bloom till August; but if not cut, they begin to bloom a few weeks after planting-out.

The *Calceolarias* are excellent town-flowers; they appear less sensitive to smoke than any other bedding plant. The varieties I grow are Aurea floribunda, Kayi, Gaines's Yellow, Prince of Orange, Sultan, and Sparkler. They all bloom very freely if attended to, as they are very liable to green fly. As soon as they show the least signs of this insect I give them a good syringing with Fowler's Insecticide, and this soon puts them right. Of course, a few plants will go off during the hot, dry weather, but I make good the vacant place by having a few in 5-inch pots. The cuttings I take off, 2 inches long, during the first week in October, take off the bottom leaves, and dib them out 2 inches apart in a cold frame, within 6 or 8 inches from the glass; the bottom of the frame well drained to keep out damp. The compost for planting the cuttings in is loam with one-fourth sand. Keep the cuttings shaded for three weeks, after giving a good watering to settle the earth round them. After three weeks give a little air, and so on through the winter. Keep the frost out of the frame, and if sharp frost sets in keep the covering on night and day. I generally give a little air in the middle of the day, or the cuttings are apt to damp-off. In the first week of March I cut out the leading shoot. This makes the plant break on the side, and give more bloom. I plant them out in April without potting, as it saves so much time, and I generally find they bloom very well; of course they would do better if potted for two months, but I do not do so, and I grow some thousands by this treatment.—SAMUEL BROOME, *Temple Gardens*.

NOTES AND GLEANINGS.

THE Duke of Argyll has consented to take the chair at the next Anniversary Dinner of the GARDENERS' ROYAL BENEVOLENT INSTITUTION on Wednesday, 23rd June next. Lord Stanley has promised to preside as Chairman at the Anniversary Dinner to be held in 1870.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, see that the ground is in readiness for this, also for *Sea-kale* and *Rhubarb*, which should be planted soon.

These require a deep rich soil, which should be trenched 2 feet deep, with plenty of rotten manure well incorporated with the bottom spit; indeed, the ground can hardly be made too rich, particularly for Asparagus. This, when planted in well-prepared soil, is very productive, yielding a large number of fine, strong shoots every season; whereas, if planted in poor, shallow soils, no after-attention in the way of surface-manuring or watering with manure water, will serve to secure first-rate heads, and it is so much esteemed in most families, that the trouble and expense to properly prepare the ground should not be complained of, particularly as beds rightly made last for many years. *Broccoli*, sow in beds of light rich soil, in an open situation, for an early crop, and *Cabbages*, *Cauliflowers*, &c., in succession. *Dwarf Kidney Beans*, put in a small breadth of some early sort, on a warm, dry, sheltered border, and plant a quantity in small pots, to be raised in a cold frame and planted out as soon as all danger of frost is over. *Peas and Beans*, see to keeping up a succession, also plant out winter *Lettuce* in a rich, warm piece of ground, and provide a succession of Radishes, and other small salad plants. *Spinach* and *Turnips* should be sown on a warm rich border, also *Leeks*, *Brussels Sprouts*, and *Savoy*s.

FRUIT GARDEN.

Do not neglect to protect the blossoms of Peach and Apricot trees, so as to secure a crop if possible. Whatever kind of covering is used, it should be so arranged as to be easily removed on fine days, and let down again at night, for the thinnest covering is injurious to the trees, by sheltering insects and obstructing the light, when allowed to remain all the time the trees are in blossom. See that recently-transplanted trees are not suffering from want of water, a circumstance which, however, will hardly happen except on dry, porous soils, and in such cases the ground should be mulched with decayed leaves to preserve it in a uniformly moist state.

FLOWER GARDEN.

Look well to recently-transplanted trees and shrubs; the soil in which they are planted should be kept moist, but not saturated, or run together by over-watering, as is sometimes done. When the weather shall have become warmer a sprinkling overhead with the engine in the evenings of drying days, will be of more service to large evergreens than over-watering them at the root. See that everything recently planted, whether large or small, is well-secured against wind. Take advantage of the present state of the ground to stir and rake the surface soil of herbaceous borders, to prevent the growth of weeds and give a fresh neat appearance; also plant out young stock of herbaceous plants, and sow hardy annuals, biennials, and perennials, where these are in demand. Prune Tea and other Roses, and attend to the pruning of shrubs requiring it. See that gravel walks are put in perfect order for the season, and give turf a good rolling preparatory to mowing. Many plants, for instance Asters, Phloxes, &c., throw up too many flowering shoots; where such is the case thin them out at once, so as to obtain fine heads of bloom, and increased strength in the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may still be planted, as it is desirable where they are extensively grown, to plant at two or three times, in order to ensure a succession of bloom. These showy plants are very suitable for long lines, parallel with straight walks, walls, &c., where they produce a fine effect. If the soil of any beds or clumps for masses requires renewing or enriching by the addition of animal or vegetable manure, it should be immediately done, in order that they may be ready to receive plants or seeds. Where the same or nearly the same plants are grown for a number of years successively in any of the beds, it is advisable once in four or five years to remove a large portion of the old mould, and to fill up again with fresh soil. This practice, however, for some plants, Zonal Pelargoniums for instance, would be rather injurious, for the latter generally grow more luxuriantly than is desirable, even in the poorest soil. Many bedding plants, however, particularly annuals, take more from the soil than can be supplied to it in a moderate top-dressing, and where we find a certain kind of plant exactly suited to a particular situation, we do not change it every year, but prefer changing the soil. Perhaps no kind of flower garden is more generally interesting than one of mixed herbaceous plants, if they are tastefully arranged as regards height and habit of growth, colour, and season of flowering, and it is owing to want of attention to these particulars that flower gardening of this description is so little in repute. The beds are too generally planted with little regard to system at first, and gaps which

occur afterwards are supplied with little better taste. As the arrangement of the plants cannot be rectified during the season of growth, the best method of proceeding is to move them carefully as they come into flower, and to make notes of their heights, colours, season, and other particulars. With the assistance of this information, any cultivator may make a collection of herbaceous plants both beautiful and interesting.

GREENHOUSE AND CONSERVATORY.

During the continuance of the cold easterly winds which we are now experiencing, air must be admitted with caution, opening the ventilators on the sheltered side of the house, and avoiding as much as possible the passing of cold drying currents over either plants in bloom or those commencing growth. See that twiners which are starting into growth are kept free from insects, as these, if allowed to gain a footing upon the young tender shoots, will soon do a vast amount of mischief. *Mandevilla suaveolens* is one of the most beautiful and useful of twiners, but it is subject to the attacks of green fly and thrips when commencing its growth in a cool house, and unless these be eradicated they will greatly retard its growth, and prevent its blooming early. This plant is well worth any care it may require, for it almost rivals the lovely *Stephanotis* itself in beauty, is not much inferior to it in fragrance, and grows and blooms as freely in the conservatory as the *Stephanotis* does in the stove. It requires, however, to be kept dry at the roots during winter, and should not be encouraged to start into growth early in the spring. In a close-roofed conservatory it will be one mass of bloom from the middle of July till November. Attend to the potting of Heaths and other hardwooded plants as they require it; this operation may be performed with propriety at any season, when the roots are making progress without unnatural excitement, but especially when the plants are commencing new growth, which, as regards the generality of hardwooded plants, takes place immediately after their season of flowering. Before potting take care that the old balls are sufficiently moist, for if potted in a dry state it will be impossible afterwards to moisten them without souring and saturating the new soil. As soon as any plant has done flowering, its future shape should be adjusted, by removing a portion of the old flowering stems, and unless seeds are an object, they should never be allowed to ripen on any plant. In conservatory borders, plants, whether climbers or otherwise, which have been planted for some time, should have as much of the old exhausted soil removed as can be done without materially injuring the roots, and the space should be refilled with fresh compost; at the same time any desirable alterations in arrangement should be made. Let the main portion of the soil for these plants consist of rough chopped turfy loam, or peat with an admixture of richer materials, according to their special requirements.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Owing to the rain, sleet, and snow, accompanied though they were with fine bursts of sunshine, the frosty mornings have rendered it still unsuitable to sow *Onions* on our heavy retentive soil. If it do not become dry enough ere long, we will do the best we can—namely, draw shallow drills, and cover with fine-riddled stuff from beneath the potting benches. This refuse soil, which soon accumulates where there is much potting, when kept dry is invaluable for many purposes at this season, as the above, for covering seeds of all kinds out of doors, making a part for early beds of Potatoes, Carrots, &c. We use it for early beds of Radishes out of doors, to be slightly covered with litter as soon as the seedlings appear. But for having plenty for use from under protection, we would cover these beds at night, and in all cold days, so as to give every advantage of sunshine to heat the soil, and then the slight covering to a certain extent prevents the heat escaping.

Planted a few more Potatoes, but the work was very much a repetition of what has been alluded to in previous weeks.

The frosty mornings furnished a good opportunity for turning over ridged-up soil in the kitchen and flower garden, and in such weather it is impossible to do this too often. The more thoroughly soil that has anything in it and is at all stiff and heavy in its character is turned and exposed to the atmosphere the more friable it will be, and the better will all annual crops succeed. In very light lands the frequent turning is less necessary, and in many cases would be injurious, as allowing manurial matters the more freely to escape. As a general rule, the earth is a paymaster that gives wages of returns in pro-

portion to the work done. We have seen fields ploughed only once or twice for Turnips, and the seeds sown a rough way on uncleaned land, but too often it would have been pretty well as profitable to have left the fields a bare fallow. The other day we saw a beautiful field of Turnips, mostly sown after the change of weather in the last week of August, but the ground had been stirred, and cleaned, and rolled, and stirred again ever so often until it resembled a fine Onion bed rather than a field. What with the mild winter, keeping the meadows growing right on, and such crops of Turnips, many of our clever farmers never knew a better season for supplying their stock of live animals, notwithstanding all the dismal prophecies of the last summer.

FRUIT GARDEN.

Went on pruning and nailing in suitable weather, and keeping the buds so far from the birds as recently detailed. Have a nice heap of rough hay which we saved from the pleasure grounds last summer, ready to sprinkle over Gooseberry bushes if we should have an extra severe night, which is still very possible. We can well recollect having 20° below the freezing point towards the end of March. As yet there has been no frost to injure them, though the bushes are becoming rather green. Sometimes a little protection will make all the difference between a crop and no crop. In a severe night it would be desirable to do the same with the forwardest Peas, but we trust it will be unnecessary, as the smallest sprinkling of such litter on them, or even laurel boughs, will bring our neighbours the birds in shoals to see what it is all about. In our experience they are not so curious about Gooseberries; in fact, trouble them but little after the green leaves begin to appear. The leaves are yet too small to protect the incipient fruit if frost does come.

ORNAMENTAL DEPARTMENT.

Roses are very forward. Those against fences and pruned long ago have been protected with laurel boughs. Except the very hardiest, we have not yet pruned those out of doors in the open ground. We shall be safer deferring it a little longer, and then cut a good part of the forward shoots away, as if left the Roses rarely come so nice from shoots that have been battered with the cold winds and nipped with the frosts. In large plants we generally cut back those forward shoots a half or eo of their length, so as to get early blooms from them; and others we cut well back, leaving only a few buds at the base, and these will come in for succession on the same plant. Tea Roses planted out should have a little fern or an evergreen bough over their heads. They are so sweet and beautiful as to be well worthy of the protection of a wall. We live in hopes of growing a nice collection in a cool house like an orchard house; there they would just be in their element. When wanted early a hot-water pipe might go round the house, and if the house was not very large a brick stove would do admirably. For all such purposes, though an iron stove would do, we would prefer brick, as the heat is more regular and kindly.

Houses versus Pits.—Removed a second batch of Roses in pots from a pit into a vinery at work. The Roses taken up from an old roseroy, and treated as previously described, potted and plunged in a mild hotbed out of doors, are now showing well; but we have headed this paragraph for the purpose of again recommending our readers who are halting between the two opinions, as to having a pit or a small house, to decide if possible on the latter, even if the expense at first should be a little more, and it will not be so much more if you have a wall already in existence against which you can place a lean-to. Not only will you be able to walk among your plants, and attend to all their wants under cover, but you will have the satisfaction, especially if you have less or more of front glass, to see your plants thrive better in winter and spring than they will be likely to do in a pit as generally constructed, simply from having more air and more light. From the flatness of the roof in pits a small portion of the direct rays of light reaches the plant in winter. In a house if the roof be rather flat, if there is front glass, there will be more direct light in winter and early spring, a matter of much consequence as respects sturdy growth and early blooming. We, therefore, like to start Roses, &c., in a pit, but as the buds show they will open faster and better in a house more roomy and with more light.

The same may be said of early Pelargoniums. They will bloom sooner and better in a house with more light. The scarlets of all tints are very well for house and corridor decoration, but they seldom stand well, or carry well as cut flowers. The florists' Pelargoniums are much more useful in that respect. Alba multiflora, Dennis's Alma, Blanchefleur, &c., are

fine for this purpose in winter, and planted in small 6-inch pots, and not cut down in the autumn, will be coming now with but little extra heat. Lately we have not done much in this way, and would be glad to be assisted to the names of a few that bloom most freely in winter. Now with respect to such as these, the temperature, &c., being the same, we find they bloom much better in a roomy house than in a pit, and we believe for the reasons specified.

A good deal of the time during the week has been taken up in fresh-arranging the plants, bedding plants, &c., in the houses, getting all of the latter chiefly into the cold late vinery, orchard house, &c. A second vinery just breaking was filled from the first vinery chiefly with these forced Pelargoniums, which seldom show their bloom long before it is taken away, bringing them from the first vinery where the temperature would be too high for them, as that will average 60° at night until the bunches begin to open for bloom, when it will be gradually raised. The first house being properly cleaned, was filled thinly beneath the Vines with nice plants of the Scarlet section, which will stand more heat without being injured; these latter being brought from a pit where they had a little bottom heat, after being shaken free of their old soil and repotted. With a little weak manure water, such plants kept thin will throw up huge trusses. Of course, before the Vines cover the roof densely, such plants will be moved to the conservatory, corridors, &c., after being duly hardened, so as not to feel the change, a little matter that beginners are apt to forget. Fine plants often suffer greatly from being taken at once from a warm to a cold place, and would not have suffered at all if the transition had been gradual, and a few days intervening before it was completed.—R. F.

COVENT GARDEN MARKET.—MARCH 17.

The arrivals generally have been more limited in consequence of the present seasonable weather, which will have the effect of retarding the overgrowth of some crops, and improve Cabbages, Broccolis, &c. Good Apples, both dessert and culinary sorts, are now in fair demand. Pears are almost over for this season.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	1	6	to	2	Melons.....each	2	0	to	5
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	12	0
Black.....do	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries..... quart	0	0	0	0	Strawberries.....doz.	3	0	0	0
Grapes,Hothouse.....lb.	12	0	18	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes doz.	3	0	to	6	0	Leeks bunch	0	4	to	6	0
Asparagus 100	5	0	8	0	0	Lettuce score	1	0	3	0	
Beans, Kidney hd.	1	0	2	0	0	Mushrooms pottle	1	0	1	6	
Beet, Red doz.	2	0	3	0	0	Mustd. & Cress, punnet	0	2	0	3	
Broccoli bundle	1	0	2	0	0	Onions bushel	8	0	10	0	
Brus. Sprouts $\frac{1}{2}$ sieve	3	0	3	6	0	Parsley sieve	3	0	4	0	
Cabbage doz.	1	0	2	0	0	Parsnips doz.	0	9	1	6	
Capsicums 100	0	0	0	0	0	Peas quart	16	0	0	0	
Carrots bunch	0	6	0	10	0	Potatoes bushel	4	6	6	0	
Cauliflower doz.	1	6	4	0	0	Kidney do.	4	0	7	0	
Celery bundle	1	6	2	0	0	Radishes doz. bunches	1	6	0	0	
Cucumbers each	1	0	2	0	0	Rhubarb bundle	0	6	1	0	
Endive doz.	2	0	0	0	0	Sea-kale basket	2	0	3	0	
Fennel bunch	0	3	0	0	0	Shallots lb.	0	8	0	6	
Garlic lb.	0	8	0	0	0	Spinach bushel	2	0	3	0	
Herbs bunch	0	3	0	0	0	Tomatoes doz.	1	0	2	0	
Horseradish bundle	3	0	5	0	0	Turnips bunch	0	4	0	6	

TO CORRESPONDENTS.

BUDDING MANETTI ROSE STOCKS (A. B.).—"I prefer budding Roses on Manetti stocks to grafting them. The union is often more intimate. They should not be cut down when budded. They should be budded as close to the ground as possible. It is best to scrape away the ground, and bud the Rose close to the roots. If you desire to start the Rose in the same year as it is budded you must, when the bud has taken, cut the Manetti stock down late in the year, to within 3 or 4 inches from the bud inserted. It is better that it should remain dormant.—W. F. RADCLIFFE."

NOTICE TO QUIT (A Country Subscriber).—"Whether a quarter's notice given by a landlord to his tenant to quit a cottage is sufficient depends upon circumstances of which we know nothing. Unless there are special circumstances, or a written agreement, half a year's notice is necessary. We cannot name plants from leaves only.

TOADS (T. D.).—"Your friend has been hoaxed. There are in England quite enough of "toads," both biped and quadruped, to render importing them from Switzerland needless.

AUCUBA FERTILISING (A Subscriber).—"Although a strong lens is mentioned by our correspondent as required to see clearly the parts when

fertilising artificially, we have little doubt that your spectacles will enable you to see clearly enough. We know of too many instances of the female *Aucuba* being fertilised naturally by having male plants growing near them, to have any fear upon the subject. We would plant a male *Aucuba* on the north side of the females, so that their shadow might retard the blooming of the male, and then leave all the rest to the bees and flies. *Calycanthus præcox* is a synonym of *Chimonanthus fragrans*. *Calycanthus floridus* is the *Allspice* plant. The *Prunus* you mention is hardy.

TAN FOR MELON PIT (*Spencer Wells*).—The tan ought to stand in the pit until the heat has risen; and soil should then be placed upon it, putting about a barrowful under the centre of each light; and raising it in the form of a cone flattened at the top on which the plants should be planted, adding more soil to the cones as the roots appear at the sides, and continuing this until the bed is covered with from 10 to 12 inches thick of soil. The best soil for a Melon is a strong loam, the top 3 inches of a pasture laid up for six months, then chopped up, and made tolerably small, and in placing it in the pit tread it firm, at the same time let it be moderately dry. Be careful that too much tan is not put in the pit, as new tan sometimes heats violently. The bottom heat should not exceed 90°.

EUCHARIS AMAZONICA FLOWERING (*S. P.*).—Your plant kept cool and dry over the winter, should, if now placed in heat, flower in May or June, or the flowering may be earlier or later, according to the condition of the plant. The placing in bottom heat would tend to a more speedy growth, and is in most cases beneficial.

TREATMENT OF STOVE PLANTS (*A Subscriber, C.*).—The *Cyanophyllum* magnificent with the leaves withered ought to be cut down to within one or at most two joints of the surface of the soil, the nearer the better—and be placed in a bottom heat of from 75° to 80°, and a top heat of from 70° to 75° by day, with a rise to 80° or 90° from sun heat, and of 65° at night, maintaining a moist atmosphere by frequently sprinkling the paths, walls, and every available surface, but avoid wetting the plants overhead at this or any stage of their growth. When the plants have pushed shoots a few inches long, pot off the plants, taking away most of the old soil, and placing each plant in a pot sufficiently large to hold the roots comfortably, returning it to the hotbed, and keeping the frame close, moist, and shaded from bright sun, until the plant has recovered from the moving, then expose to light, and admit air moderately, but avoid cold currents, watering copiously after the roots are working freely in the fresh soil. Good drainage should be given. Pot as required. The *Spherozyne latifolia* should be treated in the same way. The *Eriocnema marmoratum* losing all its leaves is only what may be expected of an herbaceous plant. Place it in a hotbed, and maintain a moist brisk heat, and when it begins to grow shake out, and repot. The hotbed in the stove will answer well.

PLUNGING MATERIAL (*Idem*).—We do not know of anything better than old spent tan sifted, using that remaining in the sieve. Cocoan nut fibre refuse is a good material, but it and sawdust have the defect of caking, and fostering fungus. Sifted cinders have none of the above defects, and are excellent.

MOSS IN FLOWER POTS (*St. Bridgid*).—The cause of the moss on the surface of the soil of your flower pots is a consequence of its surface not being stirred, the soil being too close and wet. The remedy is to repot in more loose soil, and not water oftener than required, and stir the surface frequently with a wedge-like piece of wood, removing the moss, adding fresh soil if necessary.

ANEMONES WEAK (*Idem*).—You may stir the ground around and between the plants, and give a top-dressing of well-decayed stable-manure. Do not stir the soil so deeply as to injure the roots of the plants. The soil should be light or sandy, and well drained.

PEACH BLOSSOM FALLING (*West Cumberland*).—The blossom falling, judging from those sent us, is a result of imperfect formation of the buds due to a deficiency of support last year; and the deficiency may have been want of water at the root, or the trees may have been infested with red spider; but the trees being on the back wall of a viney we should attribute it to the trees not having ripened their wood, from not having received a due amount of light and sun heat, it being kept from them by the Vines. The position is unsuited for Peach trees. It would be more profitably occupied by Fig trees. Woodlice would not cause the falling of the Peach blossom.

CINERARIA LEAVES CURLED (*Idem*).—The leaves are infested with green aphids. Fumigate with tobacco, having the foliage dry, and filling the house quite full, so that a plant cannot be seen from the outside, the house being shut up closely, and a calm evening selected for the operation. Keep in a position near the glass, and admit air freely. The plants will flower in due time.

HELLEBORUS NIGER CULTURE (*A. Y.*).—The best time to plant it is in September, the plants being then divided, securing to each division two or three crowns, though one will do, and a fair proportion of root. The soil should be light and enriched with leaf mould, and deeply trenched. An open warm situation should be chosen, but the plant is the better of a slight shade in summer from midday sun. An east or west aspect is preferable to a southern one.

MELON CULTURE (*An Amateur*).—You may successfully cultivate Melons in the pit heated by a flue, but it ought to be so contrived as to furnish top as well as bottom heat. Over the flue you must place rubble for drainage, and that should be brought so high that you have from the glass 2 feet in front, and 2 feet 6 inches at back, and over the rubble you must place the rougher parts of the soil, or better a layer of turf, grass side downwards, and over that 10 inches in thickness of good, rich, strong loam, and if the top 3 or 4 inches of a pasture all the better, chopping it rather fine, and treading or beating firm. The temperature should be 65° at night at the commencement, and after the plants are well established it may fall to 60°, but better 63° to 65°, and 70° to 75° by day, with a rise from sun heat of 15° or 20°. Air being given in proportion to the temperature.

CHERRY TREE UNFRUITFUL (*A Young Subscriber*).—We are unable to account for the blossom not setting, but think it due to a want of support. We would in autumn lift the tree and replant, mulching over the roots with rich compost and littery manure. In this way you may encourage the formation of fibres, and keep them near the surface by top-dressings of manure or rich compost in March and June.

POTATO SEED SOWING (*Idem*).—The seed should be sown now in a hot-

bed, employing a pot or pan filled with light sandy loam, scattering the seeds rather thinly over the surface, and cover with fine soil, keeping moist but not very wet. When the plants appear keep them near the glass, and expose fully to air, protecting from frost, and harden off well; planting out in May in good, rich, light soil in an open situation about one foot apart. The seed may be sown in the open ground in a warm sheltered situation about the middle of April, scattering the seeds rather thinly and cover with fine soil, affording protection from severe frosts.

PROTECTING FRUIT TREES (*T. C.*).—The temporary coping should incline to the wall and overlap it a little, so as to throw the wet off; but if the wall coping does not slope to the opposite face of the wall, then the temporary coping should incline from the wall or downwards, so as to throw off the wet from the trees. The former, however, is the best, as the light is not obstructed. The cheapest and best mode of fixing a temporary coping for protection is by iron brackets driven into the wall about 4½ inches, and projecting from the wall the full width of the copings, which should not be less than 11 inches, and better if 13 or 14 inches. If there are stone copings to the wall the brackets are best let into and leaded in them, but we could not say how best to do it unless we saw the wall. Consult a blacksmith, telling him what you want. The cheapest and best temporary copings are wood boards, though roofing felt will do, but it will need a wood frame, and tarpauling will be too costly. We recommend tiffany of the two articles named by you, and if a stronger material be required, unbleached linen or "harden cloth," which may be had for 4d. per yard, is excellent and durable, more so than most materials, but is little employed. The simplest plan of fixing the protection to the wall is by means of rings, there being a light iron rod fixed in front of the coping, and the material may, therefore, be drawn aside like curtains. We know of no simpler plan; but a better plan is to have a roller fixed immediately under the coping, and the material tacked to that, which with a cord may be folded or rolled up and down like a greenhouse blind. Your experiment furnishes nothing novel. We have proved all you have many times, and we do not advocate wood projections as a substitute for front coverings. Both are necessary, but the front covering is the most necessary, and in your case the projecting coping was not dispensed with.

GRASS IN TURF (*A Blackheather*).—We answered the same question at page 167.

BLIGHT (*J. C. O.*).—What you term "blight," is the mealy bug, and nothing will kill it except careful and continuous wetting with soap water, and brushing them over whenever you see one with size water. After the plants are tolerably clean the whole house should be scrubbed with boiling soap water, as they will be found in every joint of wood or stone.

ANEMONES AND RANUNCULUSES PLANTED IN FEBRUARY (*A. Y.*).—The foliage will appear at the end of this or the beginning of next month. They should be left in the beds until the blooming is past, and the stems begin to turn yellow, then remove them. It will depend on the season, but is usual in June.

BALSAM AND ASTER SEED SOWING (*Idem*).—The seeds of both should be sown early next month, or at the end of this, in pots or pans placed in a hotbed, kept near the glass, air being admitted freely after the plants appear, so as to keep them dwarf and strong. When large enough to handle the Balsams should be potted off singly in small pots, and the Asters about an inch apart in pans. Keep them shaded for a few days from bright sun, harden them well off and plant them out early in June, in good rich soil, choosing a warm sheltered situation for the Balsams.

APHIS ON PEACH TREES (*Anxious Inquirer*).—It would not do to syringe the trees with tobacco water now that they are in full bloom. The best plan would be to fumigate them with tobacco, which will not injure the blossoms.

UNCOVERING VINE BORDER (*W. B. B.*).—The manure should not be removed until May, then take away the littery portion and neatly point over with a fork, not going so deep as to injure the roots.

HEADING BACK PLUM STOCKS (*Idem*).—The Plum stocks budded last year should be cut back to the bud and close to it. The heading should be removed at once. The Rose stocks should be treated in the same way, undoing the tyings. The cuts should be from the back of the shoots, and be brought out about three-quarters of an inch above the bud.

CONIFERS (*K. M. H.*).—We think all those you name would be likely to succeed in Queensland. Probably you may find some of them have been introduced, but it is certain they will all be scarce.

CALICO COVERING TO FRAME (*J. H. S.*).—Calico will not be suitable as a covering to a frame, for it excludes too much light. It would certainly do what you say—retain the heat, and be useful as a protection from cold. Glass is now so cheap that makeshifts of this kind are rarely resorted to. We recommend you to have glass lights for the frame. The best Cucumbers for out-door cultivation are Stockwood Ridge and Bedfordshire Surprise. Loag Prickly is more hardy.

CINERARIAS FOR OUT-DOOR PLANTING (*T. S.*).—Plants to bloom in the open borders should be sown in September, and wintered in a greenhouse, potting off and growing on in spring and planting out early in June. The seed now sown will produce plants for autumn flowering under glass. Cinerarias are not very desirable for out-of-door culture, though it may be practised. Seed sown early in February, and the seedlings potted off when large enough to handle, and forwarded in gentle heat, hardening off and planting out in good, rich, light soil early in June, will give flowers in autumn if the weather be favourable.

DESPONTANIA PINOSA AND LIGSTRUM JAPONICUM CULTURE (*A. M. W.*).—The first is best treated as a cool greenhouse plant, but is hardy, and does well out of doors in an open situation, but protected from cutting winds. *Ligstrum japonicum* may be forced, the heat being mild, and a plentiful amount of air given, with abundance of light; but we do not see its merits as a forced plant.

LAPAGERIA ROSEA COMPOST (*Subscriber*).—The best compost is fibrous brown peat full of fine white sand, torn in pieces with the hand rather roughly, good drainage being provided; indeed the drainage should be very good, for the plant requires very liberal supplies of water whilst growing. Seeds sown now will not flower until the third or fourth year. We are not able to state the price of a young flowering plant, write to the nurseryman advertising in our columns.

REPORTING CAMELLIAS AND AZALEAS (*Idem*).—The proper time to report Camellias is after flowering, or, if they do not flower, when they are on

the point of growing, and the same remarks apply to the Azaleas. The best criterion of a plant requiring potting is its becoming pot-bound or the pot becoming full of roots closely matted together, and soon requiring of water after a good supply has been given. Young plants should be potted every year, but older plants need not be potted oftener than once in two or three years if the drainage remains perfect, and the plants are healthy. The plants becoming weakly and making ill the wood is a sign of potting being required. The cause of the Camellia buds and blooms falling prematurely, we consider due to imperfect root action, which may be occasioned by too wet soil, bad drainage, improper soil, or neglecting to give sufficient water so as to thoroughly moisten the whole of the soil, and from that or some cause the blooms fall owing to want of support.

TREATMENT OF BICOLOR PELARGONIUMS (*F. C.*).—You had better pot your seedlings at once; those that are strong and well-rooted into 5-inch pots, but the weaker and more delicate plants should have as small a shift as possible, and be very careful not to give too much water till they have well got hold of the new soil. Do not cut them back nor pinch out their tops until you see signs of variegated breaks on their stems; then pinch their tops out, and also gradually pinch the green portions of the leaves away. Plant them out as you propose, and if they break out into variegation after they are planted out continue pinching away the green portions until you have perpetuated and fixed the variegated sport. Next

autumn you will see which are worth saving out of the batch. If there are any with red and white or purple streaks running up their stems, these if saved through the winter will very likely break out into variegation in the spring or summer of 1870. Ten good bronze and gold, including Tricolors, are the following:—*Bronze and Gold*,—1838, Empress Eugénie; 1838, *Admiration*; 1838, Arthur H. Wills; 1869, Princess Louisa Victoria; 1869, Viscountess Castelroos; 1879, Beauty of Wolverton. The above six are the finest of Mr. Wills's set for 1838-9. *Tricolors*,—Florence (Wills); Humming Bird; Lizzie (Wills); Howarth Ashton.

BACK NUMBERS (*Llangollen*).—You can have Nos. 1 and 2 of THE JOURNAL OF HORTICULTURE, if you enclose eight postage stamps with your address.

GLASS FOR VINERY (*E. W., Jersey*).—We like clear glass best for Vines, but some gardeners prefer the rough.

ACACIA DRUMMONDI (*R. P.*).—We do not think the foliage sent is that of *A. Drummondii*.

NAMES OF PLANTS (*Flore pleno*).—We cannot name plants from leaves only. (*C. H. Fletcher*).—It is certainly not a *Mammillaria*, and may be *Maxillaria densa*, but we cannot be certain without seeing a flower. (*C. B. G.*).—We cannot identify plants from their leaves only. (*James Scott*).—1, *Acacia Drummondii*; 2, *Libouia floribunda*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 16th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 10	29.466	29.354	39	28	42	41	E.	.00	Densely overcast; cold wind; cloudy and cold.
Thurs. 11	29.449	29.331	42	31	40	41	N.	.00	Densely overcast, snow; overcast; clear and frosty.
Fri.... 12	29.595	29.566	44	25	40	41	N.	.00	Cloudy and cold; heavy clouds; overcast, showery.
Sat.... 13	29.581	29.528	41	27	40	41	N.E.	.00	Clear and frosty; cloudy, cold wind; snowing.
Sun.... 14	29.755	29.634	40	32	40	40	N.E.	.00	Clear and fine; cloudy; overcast and cold.
Mon.... 15	29.783	29.772	40	32	40	40	E.	.00	Densely overcast; cloudy and overcast; dencely overcast.
Tues.. 16	29.729	29.576	44	36	40	40	N.	.00	Densely overcast; overcast; clear and fine.
Mean	29.622	29.537	41.43	30.01	40.29	40.57	—	0.00	

POULTRY, BEE, AND PIGEON CHRONICLE.

THE EAST INDIAN WILD BREEDS OF POULTRY.

GALLUS FERRUGINEUS, of Gmelin; "*Gallus Bankiva*," of Temminck. These birds are found in India and its islands, and in Java more than in the other islands of the East Indian Archipelago. They are smaller than our Game fowls, and larger than the largest of Game Bantams, and very strongly resemble the very smallest Game fowls, and the largest of our Game Bantams of the Black-breasted Red, Brown Red, Ginger Brown Red, Ginger, and Ginger Red colours, but not the Cinnamons, or Wheat sorts, and in making our Game Bantams from small Game fowls, we have "bred back" nearly to this wild species.

They are described as follows:—The cocks chiefly, but not always, Black-breasted Reds, rather Pheasant-breasted, but more inclining to a yellowish brownish red than our Reds are. The hen dusky greyish yellow, or more correctly still, of a dusky greyish-brown Partridge colour, some say with ashy-grey legs, but more correctly speaking the hens have dusky brownish willow-green legs; eyes yellow, orange red, brown, and dark brown, in the different shades of colour found; ear-coverts always brownish-coloured, and never whitish. This is the only wild species in which the hens have combs and wattles developed. These birds are the undoubted progenitors of our willow and yellow-legged Game fowls and Game Bantams.

There is another and rather larger sort of the *Gallus ferrugineus*, which has been often mistaken for the *Gallus Sonnerati*, and this species of the *Gallus ferrugineus* has the yellow legs, and is a little larger, both in size and bone, than the common sort of Jungle fowl, and may be styled *Gallus ferrugineus major*, while the less and commoner breed may be styled *Gallus ferrugineus minor*. The large breed is clearly that from which have originated the Indian yellow-legged breeds so common.

Both breeds of *Gallus ferrugineus* are very wild, though capable of domestication, and are rather smaller in Java than in India. These birds are not easily tamed. Some of these birds in their northern ranges in India have the horn-coloured legs, but towards the south they are greenish-legged, and this is the more common colour of the legs. The cocks sometimes have horn-coloured legs, and the hens greenish legs. The yellow-legged rather larger species is of much the same colour, a trifle lighter in shade perhaps. These birds, though very pugnacious, are less so than our Game fowls are. Average weight of the cocks from 2 lbs. to 2½ lbs.

GALLUS SONNERATI, or Sonnerat's Jungle fowl, is quite dis-

tinct from the above more common species, but is the next most common. The cock has been described as yellow-legged, and the hen blue-legged; but more correctly there are two sorts, one yellow-legged and the other dusky greenish-legged, as in the *Gallus ferrugineus*, from which it is easily distinguished, by the hens having neither comb nor wattles. The cock has a reddish-yellow hackle; back and shoulders of a reddish grey-purple colour; breast dusky bluish-dun colour; tail a dark iridescent green colour; comb and wattles a reddish-yellow or yellowish-red colour. The hen has no comb nor wattles, and is feathered up to the throat. The hen's colour is brownish with a pale greyish breast. The feathers in the cock only have a hard horny shaft in their centre, striped with yellow, and are like the Bohemian Waxwing in this respect.

This species is bold and active for its size, and is stated to be sought after by the Indian cockfighters, as it is said, though perhaps without much probability, that it will beat the Indian Game cocks in fighting, though smaller in size. The hen being without comb or wattles, together with the peculiar structure of the cock's feathers, renders it improbable that this kind is the progenitor of any of our own breeds of fowls, though it has been stated to have been one of them. It occasionally breeds with the *Gallus ferrugineus* in a wild state, and will also do so if confined with them in a sufficiently large space for breeding in. These birds are found in nearly the same districts as the first-named sorts, but rather further south, or nearer the Madras country.—TREVOR.

(To be continued.)

KENT AND SURREY POULTRY SHOW.

It has, since the discontinuance of the Crystal Palace Poultry Shows, been a matter of much regret among amateurs that no such exhibition has been attempted in the metropolis. A few kindred spirits, however, determined to re-establish a show for this district, and the support it elicited proved the estimation the effort obtained, whilst the high character of the generality of the specimens shown was far beyond an average. The Assembly Rooms at Peckham Rye are admirably calculated for such an exhibition, and the unwearied attention paid to the poultry whilst on view was worthy of every commendation.

Dorkings throughout were excellent, and the principal prize was taken with a pen sent from Dorking. Brown Reds proved by far the best colour among the *Game* fowls, and Mr. Matthews, of Stowmarket, was exceedingly successful with well-shown specimens. In *Spanish*, the class was not so good as a whole as we anticipated; the winning birds, however, were a most favourable exception, for we could not wish better. The *Brahmas* constituted not only most excellent classes, but were well filled in both Dark and Light-feathered ones. It would be very difficult to recall to mind any former London Show of these varieties so admirable throughout. Mr. Dowsett's cup pen of Light

Brahmas were one of the chief attractions of the Show. *Hamburghs* of all kinds competed in one general class—a feature which will, no doubt, be improved upon in future years—the Golden-spangled being the variety taking the first prize. The *Bantams* comprised a marvellous class, and had it been subdivided almost every variety would have been well represented. The first prize was given to Duckwing Game, the second to a pen of first-rate Gold-laced Sebrights, and the third to Blacks. *Cochins* were good, the Whites especially; and the Selling Class contained thirty-eight pens, and certainly a good number of cheap bargains were offered, sales proving numerous. The French varieties were favoured by an especial class, and they well deserve it; the *Creve-Coeurs* were unusually good. Mr. P. H. Jones, of Fulham, obtained the silver cup for the winner of the greatest number of prizes; and we cannot avoid mentioning that the cups were intrinsically of the value stated, as it is a pleasing contrast to many instances that have occurred, in which the real value and the assumed one have been widely different.

Mr. James, the Hon. Secretary, strove to insure success for this meeting, his attention to his duties, though arduous, being of the most untiring character, and his unvarying courtesy to a concerned was beyond praise. A very good collection seen by the gentlemen was not for competition.

THE BIRMINGHAM PHILOPERISTERON SOCIETY.

THIS was only the second annual meeting of this local Society, although parties from any part of the kingdom may become exhibitors, if members of the club. Only about a dozen and a half exhibitors competed, but as they form many of the most prominent fanciers of Pigeons, the interest was very great indeed, and the quality of the Pigeons shown was very far beyond the average of such meetings.

The *Carriers* were an extraordinarily strong portion of the exhibition; in fact, they have seldom at any Birmingham show been equalled. In cocks, Blacks took all three prizes, but in the hen class, Duns partook of the honours. *Pointers* were most commendable, the Whites especially so; in fact, the first prize hen was a perfect gem, and was very generally admired, being a bird of excellent quality throughout. In *Fantails*, which as a class was most excellent, Blues were the successful colour in both instances; three pens of White ones and one of Blacks being highly commended. *Almonds* were good, the cock in the second-prize pen being the best bird of the breed shown, the hen, however, shows too much white in both tail and flight feathers to mate with so good a companion. The Short-faced *Tumblers*, the *Beards* and *Balds* were a capital class. Of *Jacobins* and *Nuns* we can say but little, except that we have frequently seen much better. *Turbits* were a first-rate class. Mr. T. Robson, of Penkridge, was very properly "disqualified," and a card appended to his birds, for showing two hens as a pair in this variety. Both Foreign and also English *Ouels* were very good. *Barbs* were as fully worthy of especially favourable mention. *Trumpeters* with a good entry embraced all the colours commonly exhibited. *Dragoons*, *Anteers*, *Magpies*, and the Extra class were well filled.

Besides some dozen pens of various breeds, Mr. Yardley exhibited three very large cages of Pigeons, each containing fifteen specimens, they were respectively *Barbs*, *Carriers*, and Short-faced *Tumblers*. None of these birds were for competition; but being of very superior quality, we are informed many changed ownership.

The weather was scarcely favourable for a large attendance, but still the visitors present expressed great satisfaction.

Mr. Edward Hewitt, and Mr. Yardley, both of Birmingham, officiated as Arbitrators of all varieties except the Tumbler Pigeons for flying purposes.

CARRIERS.—Cocks.—1, G. F. Whitehouse. 2, T. Robson. 3, G. Sturgess. *Hens*.—1 and 2, G. Sturgess. 3, C. Barnes. *hc*, T. Robson; J. E. Cleveland.

POINTERS.—Cocks.—1, 2, and *hc*, G. Sturgess. *Hens*.—1, Cup, and 2, G. Sturgess. *c*, G. F. Whitehouse.

FANTAILS.—1, G. Sturgess. 2, F. Graham. *hc*, H. Adams; F. F. Foster; G. Sturgess. *c*, G. F. Whitehouse.

ALMONDS.—1 and Cup, F. Graham. 2 and *hc*, H. Adams.

BALDS OR BEARDS.—1, J. W. Edge. 2, F. Graham.

ANY OTHER VARIETY (Short-faced).—1, F. Graham. 2, G. Sturgess. 3, J. W. Edge.

JACOBS.—1, F. Sale. *hc*, J. W. Edge.

NUNS.—1, F. Graham. 2, G. F. Whitehouse.

TURBITS.—1 and 3, F. Sale. 2 and 4, F. Graham. *hc*, J. W. Edge. *Disqualified*, T. Robson. *Two Hens*.

OWLS (Foreign).—1, Cup, and 2, F. Graham.

OWLS (English).—1, J. Watts. 2, F. Sale. 3, F. F. Foster. *hc*, J. W. Edge.

BARBS.—1, Cup, and 2, F. F. Foster. *hc*, J. W. Edge; F. F. Foster.

TRUMPETERS.—1 and 2, T. Robson. 3, F. Sale. *c*, J. Watts.

MAGPIES.—1, F. Sale. 2, G. F. Whitehouse. *hc*, T. Robson.

DRAGONS (Blue).—1, F. Graham. 2, G. F. Whitehouse. *hc*, J. W. Edge.

DRAGONS (Yellow).—1 and Cup, F. Graham. 2, J. W. Edge. *hc*, F. Sale; G. F. Whitehouse.

DRAGONS (Any other colour).—1, F. Sale. 2, J. W. Edge. 3, T. Robson. *hc*, G. F. Whitehouse; J. Watts; J. F. White.

ANTEERS.—1, F. Graham. 2, F. F. Foster. *c*, F. Sale.

SWALLOWS.—1, J. Watts. 2, G. Sturgess.

FANCY PIGEONS (Any other variety).—1, Cup, and 2, F. Sale. 3, F. F. Foster. *hc*, G. F. Whitehouse. *c*, F. Graham; J. Watts.

ANTEERS.—Cock.—1, F. F. Foster. 2, J. E. Cleveland. 3, C. Barnes. *hc*, J. W. Edge.

BADGES (Black).—1, H. Sproston. *hc*, J. Sanders.

BADGES (Blue).—Prize, J. W. Edge.

SADDLES (Black).—1, F. H. Warden. 2, J. Sanders. *hc*, J. W. Edge.

SADDLES (Blue).—1, J. W. Edge. *hc*, H. E. Yates. *c*, J. Sanders.

SADDLES (Any other colour).—1, J. W. Edge. *hc*, F. H. Warden.

ROSEWINGS AND REDDREASTS.—1, J. Sanders. *c*, J. W. Edge.

COLOURING CANARIES.

BIRDS do not use sand to wash themselves in, and I feel sure ninety-nine out of a hundred birds that wash would not go and roll in the sand until they were dry, and even then only to dust their feet. Supposing they did manage to have such a sandy bath, they would not look as if they had been artificially coloured with the view of escaping detection. "M. D." must remember that the birds which have been detected having colouring on them at the various exhibitions, have almost deceived the most experienced judges, and therefore it is quite impossible for that colouring to be the means of sand or gravel. I well remember about two years ago at the Sunderland Show certain Norwich birds were thought to be coloured from the very suspicious look about them, and one of the judges, not to be baffled, applied with his white handkerchief hot water and soda to them, and not until then did the colour come off, which it did in abundance. I afterwards saw the handkerchief that was used, and the colour on it very much resembled "Judson's Dye," but certainly not sand or gravel. I am sorry to say Norwich are not the only birds artificially coloured; Lizards I know have had different kinds of dark fluids applied to them, and have also been detected. The Lizards in question were sent to one of the Crystal Palace Shows by an exhibitor not a thousand miles from the metropolis. Clear-crested birds have had their crests dyed, and been shown for Variegated-crested, these have also been detected. I am only pointing out these remarks to "M. D.," to show him the impossibility of sand producing any other colour on birds but that of a muddy hue, and even then it would not require soda and water to extract it.—A. G. B., *Derby*.

NOTES ON GOLDFINCH MULES AND MULE-BREEDING.—No. 3.

ANYONE fond of Goldfinches or Linnets would do well at this particular period to obtain for them some fresh groundsel or dandelion, to assist in bringing them forward for the season fast approaching for Mule-breeding.

To attain success every attention must be paid to the birds, not only at the time of breeding, but during the winter, for it is essential that the birds should be well attended to and their diet at times changed. By this means you are laying the groundwork for the breeding season by keeping your stock in good condition.

More than the usual quantity of canary and hempseed rations should now and then be given. Vary it with a little flax, millet, groats, maw seed, coarse Scotch oatmeal, an egg passed through a sieve, with a stale plain bun or a sponge cake, or even carrot and beetroot may be given. Of this food they will readily partake. Now and then soak a piece of bread in cold water, then squeeze out the water, add a few drops of cod-liver oil, and supply to each partition a piece as large as a nut. All these things I find good, and they keep my birds in condition, and in a great measure prevent that asthmatical complaint many are subject to.

Having obtained a Goldfinch cock, say a two or three-year-old bird, and a hen of some promise—a likely one to throw or breed Mules clear, or as nearly clear as you would wish—you will in May begin, or try, to breed with them. Breeding in cages I prefer for Mules, owing to the birds being more under control, especially the Goldfinch, which is at times very busy at destroying the eggs when he has an opportunity. Of course this applies more to some Goldfinches than others. I have had cocks which behaved very well, remaining with the hens during the whole of the laying, sitting, and the rearing of the young, and they are excellent feeders when they act kindly and as a parent should. By breeding in an open room, having half a dozen hens and a couple of Goldfinches, perhaps one or both may be mischievous, by either pulling to pieces the whole of the nests, leaving the eggs only in the box or basket, or by destroying the eggs. On attending to my birds one day I saw portions of egg-shells, and knowing by reference to my notebook that the usual time was not up for chipping, I looked in four or five nests, and not an egg was to be seen whole. I knew at once what had happened, and on further search saw

on the floor partly-formed young chicks, and the slaughterer was the Goldfinch.

Breeding in a room is advantageous with Canaries (for the cock birds are not so wicked, although there are exceptions), when they are of the same kind—for instance, Lizards or Norwich; the birds become stronger, harder in feather, and after drying from a wash you may hear their wings in flight as it were crack like a whip. They can also be better supplied with the requisites for keeping up their condition during the breeding time. The advantage of the bath, too, is very great at this particular period, especially whilst the hens are sitting; for even though the hen may return to the nest with a damp breast, it will do more good than harm.

Hens vary very much in disposition. Some will let you examine their eggs, nests, and young ones as often as you like, and will even allow you to lift them off the nests. Still this is a bad practice, for there is evident fear about a hen when you do this, that you are going to rob her of either eggs or birds. Other hens will not be interfered with. I say the less meddling the better, as long as all is going on right, having clean nests, free from the worst of all plagues, the canary bug or red mite.

In breeding young stock for a future year from your muling hens, or the hens you intend breeding Mules from, be careful not to commence breeding before the weather has become somewhat genial, for most probably the hens, through the cold, may be egg-bound, which is a most distressing complaint, with but little chance of their recovering from it. With a practical breeder—one who knows something more than the easy routine of affairs—the danger or chance of losing egg-bound hens is not so great as with one who is only beginning to gain experience in the practice.

When hens are egg-bound, which may be told by the swelled state of the abdomen, and their distressed and paralysed appearance, immediate means must be used. Do not break the egg if possible, although I have found that necessary in a very extreme case, but endeavour to get it with nature's help from the hen by using a little oil (a drop), on the vent; and if you have not oil at hand, a little lard or butter will answer, because the inflamed state of the bird will soon soften it. Then, as a medicine, give the hen, with the aid of a thin skewer or a piece of quill, a drop of castor oil, applying it as far down the tongue or throat as possible without hurting the bird. The assistance of a second person will be desirable, but be careful the beak is not opened too wide. When you have done this put the hen in a warm bath, holding for about five minutes the lower portion of her in water of a blood-heat, and after that place the hen in some flannel before the fire. This will cause a gentle glow or perspiration to ensue, give an action to the bird, and enable her soon to lay her egg. If you only succeed in getting the egg from her life to a certainty will be preserved, but if the hen is too weak to lay she will soon die. In a large sleeping-room of my house I had fixed in a corner near the window, the sunny side of the room, some breeding partitions, and in one of these I placed a pair of Lizards, which went on well until the morning on which I expected the first egg. On awaking and not seeing the hen upon the nest, and receiving no reply to the imitating chirp a fancier soon acquires when keeping Canaries, I passed my fingers quickly across the wires, and to my surprise the hen did not rise. I found her in a corner with partly-extended wings, and to all appearance in the agonies of death. I quickly took her with me into my bed, and after breathing upon her about twenty minutes an egg was laid in my hand. A chick was reared from this identical egg. Five minutes after the laying of the egg the Lizard was as lively as ever, and refreshed herself with a bath.

An unfavourable change in the weather will often cause much disappointment to the fancier, especially if a dry, searching north-easter should set in. A south wind with a humid atmosphere is advantageous both for hens laying and for the chipping of birds.

Give your Goldfinches and hens, whilst breeding, plenty of green food—lettuce, groundsel, or dandelion.

In my next paper I will treat more upon the kind of hen for muling with the Goldfinch.—G. J. BARNESBY, *Derby*.

THE SWARMING SEASON IN GERMANY.—The Baroness von Berlepsch in a letter which I have received from her, says, "There were comparatively but few swarms also in Germany. This is generally the case if summers are very dry, as in 1842, 1846, and 1865."—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

CHICKENS ON A BRICK FLOOR (*E. Lloyd*).—You must not put your chickens on a brick floor. Put them in the garden in a sheltered spot, so far as wind is concerned, but not hidden from the sun. Let them be covered up at night with a sack or matting, or something of the sort. Feed them well, and give them only good beer to drink.

KEEPING FOWLS PROFITABLY (*Gardener's Wife*).—We are glad to hail the beginning of better things. Fowls are not injurious in a kitchen garden to the extent you name, and the number of insects and vermin they devour would always make compensation if they were. You may keep from twenty to thirty fowls in your garden, and at times more. For ordinary purposes, such as eggs and useful poultry, you cannot do better than accept the eggs offered you between Brahma and Dorking. It is impossible to say what quantity of food is required by fowls in a garden. We can, however, help you to begin your calculation; the expense of each should not exceed 2d. per week.

FOOD REQUIRED FOR POULTRY (*C. L. M.*).—It is always impossible to answer such a query as yours. The food ground into meal is more profitable than when given whole. We hold inferior corn, if that means shortness of weight, to be most extravagant food. It will also be found better feeding if the food is varied daily, or twice or three times per week, instead of feeding the whole week on the same. Start fairly on a Monday morning, weigh or measure all that is given during the week, let there be no waste by allowing food to lie about, and at the end of the week calculate the consumption. This will be better information than any we can give.

WOODEN-FLOORED POULTRY HOUSE (*J. N. C. P.*).—We have had bitter experience of wooden flooring. We have, as in duty bound, tried that as well as other experiments. The result has always been swellings at the knee joints, paralysis, and death. If it is very inconvenient to remove the flooring, you may cover it with road grit and gravel 6 inches deep. Your perches must be within 24 inches of the ground.

FOOD FOR CHICKENS (*Lemon Egg*).—Indian meal is not food for chickens, and beer is, at this time of year.

GOLDEN POLAND HEN (*A. B.*).—The only disadvantage in the white feathers in the crest of the Poland hen, is the proof it affords that she is not a young one. If two birds could be shown of equal merit in every other particular, but one had white feathers in the crest, whereas the other was entirely coloured, no real judge could hesitate for an instant between them. The coloured crest must be preferred; but it is almost impossible to find a bird over eighteen months old that has not some white.

BUFF COCHIN COCK (*Hampton Wick*).—What fowl do you purpose making? Do you want spangled Cochins? If so, you will do well to inquire for some Cuckoo Cochins with red and yellow feathers, that we sometimes see at shows. The probability is that a dark Buff cock would make the barring heavier. That would be the first step, and it would be important, as the produce would be pure Cochins. You would have to induce real spangling from a spangled fowl. This must be selected as like to a Cochin as possible, and you must be careful to choose the exact shade of golden or silver, also to avoid topknots, and, if possible, double combs.

HOUDAN COCK'S TAIL (*B. B.*).—Yellow feathers are not desirable in the Houdan's tail, but they are not blemishes. Red feathers are a disqualification; they are positively forbidden.

HENS NESTING WITHOUT LAYING (*Ivanhoe*).—We do not believe the hens go to the nest every day for other purposes than to lay. You must watch them still more closely. You must ascertain how long they remain on the nest. If only the usual time for laying, we believe they lay; if a much longer period, they merely go there to rest, or for a refuge from the cold wind. They must have laid more eggs since the beginning in January, and if they had done they would be broody. If they were broody they would remain on instead of leaving the nest. In our Brahma house, where we keep a large number, we have a row of laying-boxes. These are always full in the morning of hens and pullets, but when we drive them away there are few eggs. During the day they constantly return. Do your hens cackle when they leave the nest? We advise you to watch them closely, and to drive them from the nest the moment they look about and make any sound. You will find eggs, we believe.

PULLETS DYING AFTER LAYING A SOFT EGG (*A Two-years Subscriber*). From the few facts you mention, we think the pullet died from inflammation of her egg organs. She was probably too fat, for the food you give is very nourishing. Ground oats instead of Indian corn, and potatoes mashed up with the meal, would be better diet, especially in mild and hot weather.

ANTWERP PIGEONS.—"H. T. K." has sent us an extract from Mr. Brent's book on Pigeons, but as it is published at our office it is well known to our readers. Our correspondent says that unless purchased when very young, Antwerps are apt to ascend. Older birds will not stay unless shut up until they have bred once.

SENDING CANARIES BY RAILWAY (*J. H.*).—They will stand a twenty-four-hours journey very well, and are daily sent to all parts of England. We know of some sent to Dublin a short time ago, and they arrived in good condition. A man who understands his business will pack them carefully and send them by night mail. All birds for exhibition travel in this way. If you want a first-class bird, write to Mr. Hawkins, 6, Bear Street, Leicester Square; but, remember that you will have to pay a high price for a good one, and in no class of birds are there such gradations of excellence as in the Belgian.

PRESERVING EGGS.—An *Old Subscriber* recommends the following:—"To half a peck of new lime add four gallons of boiling water, keep it stirring some time, then cleanse it through a sieve to remove all lumps. When quite cold add three ounces of cream of tartar and ten ounces of coarse salt, let it stand a fortnight before dropping the eggs in—cover all up."

INFLUENCE OF HEN (*A. X.*).—The hen sitting on the eggs will have no influence beyond hatching them.

PARROT NOT TALKING (*E. C.*).—The tongue does not require to be cut. Frequently repeat to the bird any word you wish it to utter.

CHEAP AND GOOD HIVE (*R. P.*).—Payne's Improved Cottage Hive, made somewhat larger than described in "Bee-keeping for the Many," say 16 inches in diameter, by 8 or 9 inches deep—is a cheap and useful hive. We know of no mode of management which can be relied on to prevent bees swarming out of common straw hives.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 25—31, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
25	TH	LADY-DAY. Meeting of Zoological Society.	50.9	32.8	41.9	15	54	af 5	18	af 6	11	af 3	68	af 4	64
26	F	GOOD FRIDAY.	51.6	32.4	42.0	16	52	5	20	6	34	4	26	5	65
27	S		53.8	34.0	43.9	14	50	5	22	6	58	5	55	5	66
28	SEN	EASTER SUNDAY.	53.0	34.1	43.6	17	47	5	24	6	21	7	23	6	67
29	M	EASTER MONDAY.	53.8	33.6	43.7	13	45	5	26	6	44	8	49	6	68
30	TU		53.7	34.5	44.1	19	43	5	28	6	3	10	19	7	69
31	W	Meeting of Society of Arts, 8 P.M.	55.0	34.0	44.5	18	41	5	30	6	15	11	50	7	70

From observations taken near London during the last forty-two years, the average day temperature of the week is 53.1°; and its night temperature 38.3°. The greatest heat was 75°, on the 27th, 1830; and the lowest cold 14°, on the 25th, 1850. The greatest fall of rain was 0.68 inch.

THE CULTURE OF HARDY FRUIT TREES.



A HANDSOME fruit tree, of full size, health, and vigour, is at all times an agreeable sight, but perhaps it is never more generally appreciated than when its branches are laden with fine fruit, whose bright hues give token of its approaching maturity. To have such trees trained in a form which affords the largest quantity of fruit in a given space, while it encroaches as little as possible upon the adjoining crops, must ever be the aim of the

gardener. This is, doubtless, the object of the many advocates of cordons, miniature fruit gardens, and the like. My impression of many of these modern methods of fruit-culture is that they are pretty toys, which offer an endless source of interest and gratification to the owners of small gardens, and may also prove useful in extending a correct knowledge of fruit nomenclature: but I very much doubt if they offer any great advantage to the professional gardener, whose aim must ever be to combine, as far as may be practicable, great productiveness with beauty of form.

Perhaps amongst all the varied forms which fruit trees are caused to assume, none is more justly popular as combining most of the above desirable qualities than the pyramid. Certainly, no finer sight can be witnessed in hardy fruit culture than a good collection of well-managed pyramids; but for general utility, although somewhat formal in its appearance, commend me to the espalier form, for in a good espalier we have by far the best exemplification of economy of space and abundance of production. Occupying just the same space as the much-vaunted horizontal cordons, its fruit is not counted by a few dozens, but by a few bushels—bushels, too, of fine fruit, that on both sides of the espalier has been fully exposed to the action of light and air, and which, by a judicious thinning, has acquired its fullest development of form and colour.

One objection advanced lately in the pages of a contemporary, by an advocate of horizontal cordons, against the espalier on the Crab stock, was that it, "no matter how big and ugly was the trellis you put it upon, was always with difficulty kept within bounds, always pushing its vigour to the top branch." That the top branches of the espalier, or tree of any other form, are as a rule the most vigorous, it is impossible to deny, but that this vigour is detrimental to the fruiting properties of the lower branches is most decidedly erroneous, provided the requisite skill has been bestowed on their formation, and this is by no means a difficult matter. No tree, whether espalier or pyramid, should be allowed to make much upward growth till sufficient vigour has been thrown into its base or lower branches. Why, it appears to me to be just as sensible to say that because a Peach tree on a wall produces a few gross shoots from its central or uppermost branches, therefore its lower branches must become weak and barren, as very likely they might, if such gross shoots were not stopped, and so caused to expend their vigour in the production of three or four moderate-sized fruiting shoots.

It is, I believe, a well-established fact that, in order to obtain a healthy fruit tree, its growth should receive as little check as possible in its infancy; for if a young fruit tree once becomes impoverished and stunted by being planted in a poor or shallow soil, it is a difficult matter to reclaim it, and as it advances in age, so surely is it more susceptible of disease than the tree whose unchecked vigour has ever been sustained by a good soil.

The treatment of espaliers is too well known to require any detailed statement here; I shall, therefore, confine my cultural remarks to one or two important points.

In selecting trees for this purpose it is best to choose what are technically called "maidens"—i.e., plants one year from the graft—such plants ought to have one strong shoot, and a fair quantity of fibrous roots. The planting should be done early in November, the shoot shortened to three or four eyes, and some mulching given to each tree as it is planted. The development of healthy vigorous trees in as short a time as possible is to be aimed at, and, therefore, a deep, rich, loamy soil must be the best for this purpose. In old gardens in which a generation or two of trees have already existed, the old soil should be replaced by a good sound loam, such as the top spit of an upland pasture.

I once had to replant the greater part of an old orchard, most of the trees of which had become so antiquated as to be quite useless for producing fruit, although they were very picturesque, with their enormous boles and partly-decayed limbs laden with huge clusters of Mistletoe. I hardly ever looked at these trees without calling to mind the remark of that "canny" mortal Andrew Fairservice, when he said of his master in a mingled tone of contempt and pity, "He'll glowr at an auld waird barkit aik-snag as if it were a queez-maddam in full bearing." Andrew was evidently of far too practical a turn of mind to perceive any beauty in a tree, except from a money-making-point of view. In preparing the soil for the young trees the sites of their predecessors were avoided as much as possible. A square hole was formed by taking out the soil a yard in depth and width. This square yard of earth from each hole was carted away, and replaced with three-fourths of its quantity of good sound loam from an adjoining pasture, and one-fourth of rich manure. In this soil, after it was thoroughly mixed, the young trees were planted, mulched, and staked firmly, and the four or five shoots forming the head of each tree were at once shortened to about three eyes. Concerning the propriety of this last operation there exists a diversity of opinion, some persons maintaining that it is better to wait one year after planting before shortening the head of the tree at all, as they consider it too rude an assault upon the vigour of a young tree on its removal to divest it of the greater part of its roots and branches at the same time. Now, in the study of vegetable physiology, I am taught that the crude sap, after having been digested in the leaves, descends quite altered through vessels in the bark, and is then described as cambium. The annual increase of bulk in the tree will be in proportion to the supply of cambium or thickened sap. Therefore, if by pruning the head of the tree at the time of planting I can

secure a larger number of leaves, or the organs of digestion, shall I not very materially add to the vitality and vigour of the tree at perhaps the most critical period of its existence? The results in practice have invariably proved this reasoning to be sound. The action of a tree is very evenly balanced, and the roots will increase in proportion to the quantity of foliage.

To return, however, to espaliers. London observes, in his "Encyclopædia of Gardening," "that they are chiefly valuable for their general effect; for, the borders being usually dug, their smaller roots are prevented from establishing themselves close under the surface, and the trees in consequence seldom bear well." As a practical refutation of this dictum, I will offer a short notice of the fine espaliers at the Earl of Romney's, amongst which some of my earliest gardening days were passed.

These trees were planted by my father about twenty years ago, and they have been in his hands ever since. They were "maidens" at the time of planting, and it is probably in a great measure owing to this that the trees generally are so healthy, but very few exhibiting any signs of canker; thus proving the truth of the remark, that young trees should never be planted in a poor or shallow soil, for as Emerson, the American essayist, observes in a chapter on Power, "A good tree that agrees with the soil will grow in spite of blight, or hug, or pruning, or neglect, by night or day, in all weathers and all treatments." And here it must be admitted that but few trees have the advantage of such a soil as that at The Mote—a rich loam of an average depth of 3 feet, resting on a substratum of shattery rock. The trees are planted about 12 feet from the sides of the walks, and a narrow pathway about 18 inches wide runs parallel with and close to the front of the trees. The borders are cropped either with Strawberries or some dwarf-growing vegetables. The horizontal branches are supported by a line of stout wooden stakes 4 feet 6 inches high, and a strip of narrow scantling nailed to the tops of the stakes gives an appearance of neatness and finish to the whole. The lines of espaliers running parallel to each other on either side of the road which passes through the centre of the garden (a distance of 154 yards), form a pleasing and interesting sight, as nearly the whole of the trees are in perfect health, and are very prolific, in spite of that supposed hindrance to fruitfulness—the constant digging and cropping of the soil close to them. The line of espaliers is continued round most of the quarters of the garden.

In looking over such an extensive collection of fruit trees one cannot fail to remark the great differences which exist between them as regards their habit of growth. Some of the trees are close and compact, with their neat spurs crowded with blossom buds, while others are so full of lusty vigour, that were it not that a continuous lateral extension is permitted, the sublateral, or spurs, would probably hardly be so fruitful as they are in reality. The most difficult kind in this respect is the Blenheim Pippin, of which there is here the finest specimen as an espalier I have ever met with; its limbs have a spread of upwards of 50 feet. Another rampant-growing, but most excellent kind under this or any other method of culture, is *Hauwell Souring*, a fine specimen of which, extending 30 feet, produced 4 bushels of fine fruit last season. *Dumelow's Seedling*, or *Wellington*, extending 45 feet, is rather rampant, but produces fruit freely. *Bedfordshire Foundling*, 45 feet, is a valuable kind, of great merit, producing heavy crops. *Alfrington* is another excellent kitchen Apple, and although of strong growth it is not so rampant as some. The largest tree of it measures about 36 feet in length. It is a heavy cropper, and the good-keeping qualities of its large fruit add very much to its value.

Amongst other trees worthy of note, as being fine specimens, I may instance a *Cheshire Damson* of upwards of 40 feet. This generally carries a heavy crop, and its fruit is much valued. An *Orleans Plum*, 36 feet, and a *Coe's Late Red Plum*, are both very fruitful; the *Late Red* is much esteemed for its lateness. Of other kinds of Apples which may be selected as forming healthy fruitful trees as espaliers, are *Manks Codlin*, very prolific, forming bloom buds quickly; *Fearn's Pippin*; *Scarlet Nonpareil*, of which there is a pretty specimen, 25 feet long—it is very compact in its habit of growth, and forms a good espalier; *Margil*, which produces bloom buds freely, and bears heavy crops of fruit of the highest excellence; *Early Nonpareil*; *Gloria Mundi*, a heavy cropper, and some of the fruit of last season weighed 23 ounces; *Calville Malingre*, of a particularly close habit, a useful kitchen Apple; *Kirke's Lord Nelson*; *Tower of Glamis*; *Rymer*; *Heary Morning*; *Dutch Mignonne*; *Hawthornden*; *Winter Hawthornden*; *Keswick Codlin*; *Kerry Pippin*, a most valuable dessert Apple;

Gooseberry Pippin; *Red Astrachan*; *Cellini*; and *Golden Harvey*. A few of these trees are on the English Paradise stock, but most of them are on the Crab.

As regards the treatment to which the trees are subjected, it may be useful to state, that no growth beyond three or four eyes is ever allowed on the spurs, and although this entails a vast amount of labour in the constant pinching or pruning continued throughout the growing season, yet an ample reward is gained in the abundance of blossom buds formed by the trees under this treatment. Another advantage attendant on this constant summer pruning, is the perfect exposure of the fruit to the action of the sun and air. As the fruit is swelling, it is carefully inspected, and if considered necessary a slight thinning is given, so as to avoid over-crowding.

By this constant manipulation of the wood during its growth, the winter-pruning is reduced to a minimum. It principally consists in shortening or thinning-out any spurs which may have encroached too much upon their neighbours. When the trees are quite clear of leaves, they are well dusted on a damp day with quicklime; this process is very simple, and serves to keep the trees free from lichens, it has also a very beneficial effect upon the bark.

In a future paper I shall offer a few notes on fruit culture in our Kentish orchards, or, as they are called hereabouts, fruit "plantations."—EDWARD LUCKHURST, *Egerton House Gardens, Kent*.

CULTURE OF POINSETTIA PULCHERRIMA.

It may not, perhaps, be altogether unreasonable to offer a few remarks on this most useful, I may say indispensable, winter-decorative plant, seeing that the present is about the time to set to work with the view of forming a stock for next winter's display. These remarks will apply more particularly to the large class of plant-growers, whose chief aim is to produce a useful stock of plants of various heights for home decoration, and under circumstances not specially adapted to produce plants of a high standard of excellence. An enthusiastic cultivator once told me that he would not give a rush for plants with heads of a less size than a full-sized soup plate (I never saw his plants), and he somewhat grandiloquently set up as the standard size a barrow wheel. I regret I did not acquire his notions of standard height, or he might have given a flower stake or organ pipe, or something equally striking.

Light and well-heated structures are necessary to grow the *Poinsettia* to perfection, but the absence of this kind of plant house need not altogether exclude this plant from the collection; modest in size it may be, yet beautiful and most useful for many forms of house and room decoration.

The absence of *Poinsettias* from many gardens is ascribed to not having heat enough. In scores of cases the plea is just. It requires heat, but yet will give a good return under a lower scale of temperature than it is popularly credited with. Anyone who can command a minimum house temperature of 55° (an occasional fall of 5° below this is not fatal), from September to March, need not despair of its cultivation. This, with the common adjuncts of Cucumber and Melon frames, are the aids with which I produce an annual supply of plants from 2 inches to 2 feet in height, in numbers sufficient to give a brilliant show during the winter months.

My stock plants for propagation numbered two, each about a foot in height. One of these I cut into pieces of one or two eyes each, and put them in sand and plunged them in a brisk heat in a Cucumber frame. The other I potted and placed in the same frame just as it was. The top eyes speedily broke, and when the shoots were from 2 to 3 inches long they were taken off with a sharp knife, and put in sand under a hand-glass, and so on with the rest of the shoots, which broke out down the stem; all were taken off, put in the centre of thumb pots, and struck quickly. The plants were shifted into 5-inch pots, grown in the same frames, and in June the tops were taken off and struck in a similar manner. Some of them were again topped and struck in August. Thus four dozen plants were obtained, differing in height, every one of which bloomed in the winter. The number might easily have been increased, but in proportion to the number of times which the plants are stopped is the decrease in the size of the bracts. My experience, then, is that the quickest and safest mode of increasing stock is to pot the old plants entire and strike from the young wood, in preference to cutting up the stems into eyes and cuttings and striking from the old wood, as is often recommended.

A brisk bottom heat of from 90° to 100°, and a top heat of

80° under a hand-glass, careful shading to prevent flagging, and uniform moisture, are the essentials to success.

A stock having been obtained, the after-management is easy. Stopping diminishes in size the discs of bloom, and if not stopped they attain an ungainly height when started into growth early in spring. To obviate as far as possible these disadvantages, the most simple and effectual plan is not to start the plants so soon as usual. For instance, my plants are in a dormant state, as dry as dust; were they potted at once they would require much valuable room to grow them—room which at this time is much in request for preparing seeds and cuttings for flower-gardening purposes. Dormant then the plants will remain until I am relieved from this pressure. In the first or second week in May they will be shaken out and repotted in clean pots. I put them at once in the pots in which they are to bloom, but in the first instance filling the pots not much more than half full of soil, and top-dressing as required; the roots come freely upwards to feed. Every disturbance of the roots causes certain injury to the foliage. It is on this account that top-dressing is preferable to shifting and repotting.

By late starting three advantages are gained: first, utilising useful space at a pressing time; second, a reduction in length of stem; and third, the arrival of warm genial weather and increased sunlight render the plants less liable to receive any check by cold draughts, and they break more strongly and grow naturally more sturdy and short-jointed than in the closer atmosphere which is necessary six weeks or two months earlier in the season.

I should have said that the plants are cut down to the pot previous to starting, except when specially required to produce cuttings for increase of stock.

They are placed in a Cucumber or Melon frame, and allowed to remain as long as they and everything else have breathing room. By the time they are becoming too crowded the early crop of Melons are off. The soil is taken out of the frame, the heating material forked up, and a little fresh mixed with it to set it heating, a few ashes put in, and the plants placed thinly in the frame and quite close to the glass. The frame is slightly raised weekly as the plants advance in height, keeping them at all times as close to the glass as possible. Here they remain through the summer until the nights become too cold. Air is carefully admitted, and watering regularly attended to. If they once become too dry the foliage is spoiled, and, on the other hand, if the soil become sour by too much wet, the same results ensue. Water must always be given in a tepid state.

The soil used is composed of two-thirds rather light turfy loam, and one-third peat and well-decayed cow dung, sharpened with sand and kept open by plenty of broken charcoal. Top-dressings may be of a richer compost. Good drainage is of paramount importance, and must not be neglected. When showing for bloom, very weak and perfectly clear manure water from soot and sheep dung, will be sufficiently stimulating and beneficial.

For very dwarf plants, cuttings, as before mentioned, may be put in all through the season up to September, and bloomed in the same small pots. They will be tiny plants, with but small heads of bloom, but still valuable for cutting from, and for filling jardinetts, hanging baskets, and other modes of decoration. Last year I started some in June, which did well. I am not so particular as to time as to seeing clearly before me circumstances permitting a continuous season of growth without crowding or check from any cause.—J. W.

STOPPING BLEEDING OF VINES.

I SEND you a simple and effective mode. After pruning, if there are any signs of bleeding, I take whole Potatoes, into which I insert the ends of the laterals of the Vines, and allow them to remain on till all danger of bleeding is past. I am aware there is nothing new in this method, as I have practised it, and my father before me, for many years, and have found it answer well. Being so simple it may be a useful hint to amateurs.—WIRKSWORTH HALL.

FRUIT PROSPECTS.

AFTER a week of bitter weather of snow and piercing winds, and on three mornings the thermometer down to 20°, I have this morning (March 16th) made a careful examination of the fruit blossoms. Peaches and Apricots unprotected are mostly destroyed; under Chiswick netting partially killed, but abun-

dance left to insure a crop. Pears are apparently much injured, being very forward, but a microscopical examination shows the organs of fructification fresh and sound, so that up to the present time I apprehend no serious injury to this fruit. Apples, Plums, Cherries, and small fruits, are uninjured, being not sufficiently advanced. If the weather be favourable, 1869 will be prolific in fruit in this locality.—J. WRIGHT, Gardener to Hon. A. Leslie Melville, Lincoln.

HOTHOUSE BOILERS.

THE readers of "our Journal" will, many of them, remember I have long held the opinion that there is not a really good boiler yet invented for the heating of glass houses, and visitors to Chilwell have often known me point out what to me appeared their defects. It would seem that the makers of boilers have ignored the fact that flame is the hottest part of a fire; that to heat water with the best effect, heat should be applied from below; that to secure a good draught a sufficient body of air must be admitted into the flue; that to insure a quick circulation the return pipes must be colder than the flow pipes.

Take the first point. Can it be right that the flame of a fire intended to heat a large body of water should strike against a brick wall, as is the case in almost all boilers, or be made to pass between three or four upright tubes directly into the flue, as is the case with tubular boilers? Surely heat might be better employed than in the gradual destruction of fire bricks?

Again, might we not as well toast our kettles before the fire, in place of putting them on the fire, as expect to get much effect from the side flues of a saddle boiler? When a flue is taken over a boiler, what possible effect can it have? With narrow side flues admitting a small body of air, the chimney must be close to the fire, and thus much heat is wasted. The saddle boilers are always set with narrow side flues to increase their heating powers, and the proportion of heat utilised to that wasted always reminds me of the water ram, where the minimum of effect is produced by the maximum of power. I believe if many persons were to put a thermometer into the tops of their chimneys, or even to hold their hands over the top of one, they would be astonished at the loss of heat.

A quick circulation is essential to the economical employment of water as a carrier of heat. As soon as water is expanded by heat it ought to rise gradually to the farthest point, and as gradually descend from that point into the boiler. The rapidity of the circulation will depend on the heat of the fire, the amount of boiler surface exposed to its action, and the difference between the temperature of the flow pipe as it leaves the boiler, and that of the return pipe as it enters the boiler. For the return pipes to have to pass through a mass of red-hot bricks, as is generally the case, must tend to check the circulation of the water. This was, I think, first pointed out by Mr. McNab, of Edinburgh, and his boiler was intended to remedy this evil, but it has the very grave defect of requiring five or six courses of brickwork between the boiler and the fire bars, being in this respect inferior to a common saddle boiler.

I have at present at work the common saddle boiler, Appleby's improved saddle boiler with check draught, McNab's boiler, Stephenson's conical boiler, Thomson's retort boiler, and Meiklejohn's X boiler, and none of them is satisfactory to me. As a proof how defective they are, the X boiler, which I think with all its faults is the best of the lot, has been more than doubled in power by a few additions, and I can now absolutely boil the water in 1500 feet of 4-inch pipes.

If it be objected, "You say nothing about tubular boilers," my answer is, I would not have one for a gift. There is no doubt if you have one large enough to hold a great amount of fire, it will heat a great body of water, and so it ought. A boiler costing from £30 to £60, and costing as much to fix it, ought to do something, particularly when fed with coke. I heard the other day that the Royal Horticultural Society received one as a present, and had to pay £30 for fixing it. The deep holes required by these boilers are in many places a most serious objection. The expensive fuel is another great objection with those who can get cobble and slack at a low price. The large number of joints, all liable to give way, render them very unsafe; but besides all this, I never could see what were their advantages, except being large enough to hold an immense body of fire. There is really very little surface exposed to the action of the fire, and still less to the flame.

What, then, do we require in a boiler? That it shall not be

unnecessarily expensive; that it shall cost little to fix; that it shall burn any fuel; that it shall expose a large upper surface to the action of the fire; that nothing but iron, with water behind it, shall touch the fire; that it shall require no brick-work inside or outside above the fire bars, so that the return pipes shall pass direct into the boiler; that it shall be made of cast iron, because wrought iron rusts so quickly, and, as I have proved, is more quickly destroyed when not at work than when in constant use. Now, can such a boiler be made? I think it can, for I have the model of such a one before me. Mr. Foster, of Beaton, who has erected all my houses, brought it to me a few days ago, and said, "There, now, can you find fault with that?" and I am bound to say I cannot. It looks perfect, and when I have an opportunity I will give the Royal Horticultural Society's Scientific Committee a chance of passing their opinion upon it. Knowing the interest I have taken in the subject, Mr. Foster has left the model with me, and as he intends to patent it, will certainly not object to its being seen afterwards.

Everything that tends to cheapen and improve the building of glass houses is of importance to many of your readers, and I shall, I think, have their thanks for bringing to their notice Foster's boiler.—J. R. PEARSON, *Chilwell, Notts.*

GRAND INTERNATIONAL EXHIBITION OF GLADIOLUS.

I SHOULD like to make known to all lovers of this beautiful flower that it is in contemplation to hold a grand show of it at the Crystal Palace in August. The Crystal Palace Company has given £50 towards the Show; and Messrs. Kelway; Downie, Laird, & Lang; Paul & Son; Bunyard & Son; and Cutbush, amongst growers for sale; and Messrs. Banks, Sladden, and others, amongst amateurs, have already signified their intention of supporting it. There will be a class for foreign growers, some of whom will contribute, one for growers for sale, and one for amateurs, also for novelties and seedlings. I shall be glad to receive any subscriptions either at the office of this Journal, or at Westwell Vicarage, Ashford, Kent.—D., *Deal.*

THE CHRYSANTHEMUM AS AN OUT-DOOR PLANT.

If the claims of a plant to our notice be measured by its services when other flowers are scarce, the Chrysanthemum will give place to very few, if any; for in the dull autumn months, almost up to Christmas, it cheers us with its varied hues. Each individual floret, too, has been, through the skill and patience of cultivators, made to conform to a high standard of excellence, and without diminishing the constitutional vigour of the plant, as in the case of some other plants that have undergone improvement at the florist's hands. The Chrysanthemum, on the contrary, seems to be quite as hardy and as accommodating as of old, when its varieties were few, and the flower very loose and ill-formed. In one respect, however, it seems to baffle its cultivators—its period of blooming has been neither hastened nor retarded, and it does not appear willing to exhibit its beauties at any other than the allotted time. I remember, about thirty-five years ago or more, a provincial horticultural society offering prizes for plants flowering out of their natural course, and many attempts were made with the Chrysanthemum to comply with the requirements of the schedule, but no one, as far as I am aware, was successful, although many other plants were coaxed to flower out of their season. The autumn being the flowering time of the Chrysanthemum, its culture has settled down into an endeavour to make it as showy as possible at that period, with some efforts to prolong the blooming by raising early and late varieties; but a longer duration of its flowering can only be secured by growing plants under glass or other protection. Of the management of such it is not my intention to treat, the cultivation of plants out of doors being the object of the present article.

At what time the Chrysanthemum was first tried out of doors I cannot precisely state; but the first time I saw it so grown was about forty years ago, when it was blooming beautifully trained against a south wall, in a situation by no means favourable for tender plants. The autumn being fine, and care having been taken to cover the plant with mats at night, its flowers contrasted very favourably with those of other plants starved in pots in the greenhouse. The Chrysanthemum, however, was not generally planted in the open borders till some

years afterwards, or, rather, it did not succeed well; but by degrees the capability of the plant not only to endure our winters, but also to withstand the murky atmosphere of large towns, became known, and it speedily found its way into the shrubby borders, open plots in front of villas, and the squares of our large cities. It appears to succeed better in such places than in the clear, pure atmosphere of the country, and, with the *Aucuba*, it seems to be essential for their decoration. It must not, however, be supposed to dislike a pure atmosphere; only, where that prevails, it is seldom so well treated out of doors as it is in cities, and in many important gardens it is disregarded entirely. This is certainly wrong; for although it may not succeed well every year, being often cut off by frost, yet the number of seasons in which it does prosper in the south of England is such as to justify its more extensive cultivation, and when it succeeds well the general regret is "that there was not more of it."

The cultivation of the Chrysanthemum is very simple, and as an out-door plant it may be said to take care of itself. The only point on which an inexperienced person is likely to founder is the cutting-in the plant in summer. If this be left till too late, there will be no flowers; if performed too early, the plant will grow taller than it ought to do. A little care is also necessary in preserving the plant in winter in stiff damp soils, for slugs are apt to destroy it; a covering of coal ashes is a good protection. Frost, unless very intense, rarely injures it, and it is not particular as to soil and position; on the contrary, it will luxuriate in very unpromising situations, and many a town front garden is enlivened with the bloom of this plant in autumn, year after year, although its growth in spring and summer may have been a struggle against the feet of children who have made it their playground. It deserves, however, better treatment than this: and when generously dealt with, its flowers are proportionately better.

For out-door display I would give the preference to the Pompon varieties for neatness of habit, diversity of colour, and better adaptability to bouquet-making; but some of the intermediate class between these and the large-flowering are also good, as well as several of the large kinds. The colours will, of course, depend on the taste of the grower and his requirements; but, as a general rule, where blooms out of doors are wanted as late as it is possible to have them, the colour which seems to be best capable of bidding defiance to the autumn rain is bright yellow. Chrysanthemums of this colour appear to withstand the bleaching effects of moisture better than those of any other, and even slight frosts that tinge the points of the petals do them less harm, for the yellow is converted into a sort of bronze colour, but the tips of a white or pink flower which has been exposed to frost show damage from that cause more conspicuously. A good yellow helps also to brighten up all around it; the dull foliage, dark ground, and even murky atmosphere at the time the plant flowers, require some lively colour to give cheerfulness. A good white, I admit, would be as well, perhaps better, but the greater delicacy of that colour, and its liability to be injured in the way described, are great drawbacks; while all dark colours, as maroon, crimson, purple, and rose, fade or bleach into tints very different from what they ought to be, and, of course, much less beautiful. These remarks, it will be understood, relate to the kinds recommended for very late-flowering. Earlier-flowering varieties may be of any colour, and if a race of Chrysanthemums flowering still earlier than any we now have could be raised, they would be most useful for out-door cultivation. As it is, both early and late varieties may be planted with advantage in places where a somewhat mild autumn may be expected, or where flowers for cutting are wanted. By planting a number of Chrysanthemums where they can be protected in severe weather their beauty will be prolonged, and they will repay the trouble incurred. But even without this advantage, out-door Chrysanthemums often flower well enough in the south of England to entitle them to more extensive cultivation than at present, and the autumns in which an unusually early frost destroys all chances of their doing well are so few as not to weigh against the advantages which the Chrysanthemum offers in favourable seasons.

The propagation of the Chrysanthemum is so simple that I need not advert to it here, further than to remark that I would recommend not turning out too early those plants which have not been planted out—say in the end of April, as slugs are so fond of them; but plants growing out of doors may be taken out of the ground, divided, and replanted any time in April, throwing a little soot or lime over their crowns to keep ma-

rsaders at bay. Ordinary soil will in most cases answer without manure, but the latter may be added when it is too light or poor. The only after-attention the plants require for many months is cutting them down if they should become too tall and straggling; but this should not be done later than the first week in July, and sooner if the season be early, otherwise the plant may perhaps not flower at all. Thinning-out some of the shoots of old stools, if any such have been left, may be necessary later; but do not shorten in those intended to flower, otherwise a blank may occur. In general, it is advisable to take up and replant at least once in two years, for if this is not done the flowers are poor or indifferent.

As regards the position in which the Chrysanthemums are to be grown everyone must judge for himself; but usually the back of herbaceous borders, and ground immediately in front of shrubs, are the places chosen for the purpose. Here we have some Chrysanthemums at the back of a long ribbon border, where they are planted 5 feet apart in a row, with a Dahlia between every pair, and Pelargoniums and similar plants in front. Generally both the Dahlias and Pelargoniums, owing to frost, leave the Chrysanthemums the full and undisputed occupants of the border early in November; and in mild seasons they continue more or less gay for several weeks, and in some seasons flowers not to be despised for bouquets may be gathered at Christmas. Notwithstanding the extreme heat of the past summer, the Chrysanthemum was somewhat later in flowering than usual. Can anyone tell me the reason?—J. ROXBOROUGH.

MAIZE AS A GARDEN PLANT.

MR. BRÉHAUT's letter in your number of the 4th inst., induces me to trouble you with a few lines bearing upon the subject of the cultivation of Maize as a garden plant.

You may remember that many years ago William Cobbett attempted to introduce into cultivation in England, what became popularly known as "Cobbett's corn," the proper name of which was, as I believe, the Dwarf Canadian. He gives directions for its cultivation in his "English Gardener," and I believe he really did cultivate it to a considerable extent at his farm at Barnes. I remember to have seen a field of several acres of it growing very luxuriantly at St. Lawrence near this place, some twenty years ago, but, of course, it did not answer for farm cultivation because it could be imported cheaper than it could be grown, but that would not affect the question of cultivating it as a garden plant.

Curiosity induced me to attempt growing it in a small garden in about the very centre of London. I procured a cob and sowed the seed. The plants grew well, and bore as well as could be expected. The cobs were certainly not so large as the one from which I took the seed, but they ripened so well that for, perhaps, six or seven years I continued to grow it from seed of my own saving, but having no use for it except to make presents of the cobs to my friends, I discontinued growing it. I did not attempt to use it green, but always left it to ripen. You will see that this was grown under almost every disadvantage, when I tell you that it grew in a small garden of about 50 feet by 30, at the back of my house, on the north side of Chapel Street, Bedford Row, shaded on the south by four-storied houses, and on the east by the flank wall of what was then St. John's Chapel, so that it never had a gleam of sunshine. If this corn ripened in a situation so unfavourable, what might reasonably be expected if it were sown in a well-appointed garden and properly attended to? I rather think it might be expected to grow finer than in its native Canada, and I do not know why it should not be as good to eat green as the finer American sorts.

I sowed a few grains of the "soft corn," sent me from New York, in my garden here, last year, but I believe it was too late, and it did not ripen. Perhaps I may have better success this year. I rather think of obtaining some Dwarf Canadian and trying that in this climate.—JOHN HUGHES, *Ventnor*.

MR. SEWARD SNOW, well known as a highly successful exhibitor of fruit and vegetables at the Royal Horticultural and Botanic Societies' Shows, as well as at the Crystal Palace, died on the 10th inst. at Wrest Park, Bedfordshire, where he had been gardener for a long series of years, successively to the late Earl de Grey and Countess Cowper. As long ago as 1835 he commenced the re-arrangement of the gardens at that place, and he has left them a pattern of neatness, order, and skill to

his successor in their charge, his nephew, Mr. George Ford. Mr. Snow was the raiser of several improved varieties of vegetables, one of these being the excellent Winter White Broccoli with which his name is associated. His funeral took place on Saturday last, and the respect in which he was held was marked by the many who attended from far and near.

EAST LOTHIAN STOCKS.

My experience with regard to this much-lauded strain of Stock is identical with that of "G. S." I purchased my seed of a noted seedsman in Edinburgh, and sowed it the first week in March. From white, purple, and scarlet, with the exception of two spikes on a plant of a white one, I have had no bloom on about eighty plants, and as I put them in a prominent position, I need not say I was much annoyed. They were in good soil, had abundance of water during the hot weather, and everything was done to coax bloom, but without avail. Will some of your writers who have succeeded with this strain explain where "G. S." and I have erred in our treatment?—CALCAREA.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

VANDA INSIGNIS (Noble Vanda). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—A magnificent Orchid, native of the Moluccas, imported by Messrs. Veitch. Flowers bright brown, with darker blotches, and rose-coloured lip.—(*Bot. Mag.*, t. 5759.)

AGLAONEMA MANNII (Mann's Aglaonema). *Nat. ord.*, Arceuthobium. *Linn.*, Monoclea Polyandria.—Native of the Victoria Mountains, one of the Cameroon range in tropical Africa. Spathe creamy white; male portion of spadix white; female portion scarlet. (*Ibid.*, t. 5760.)

AMOMUM SCEPTRUM (Sceptrate Grain of Paradise). *Nat. ord.*, Zingiberaceæ. *Linn.*, Monandria Monogynia.—A very beautiful native of the vicinity of Gaboon River, South Africa. Flowers rosy-purple.—(*Ibid.*, t. 5761.)

CARYOTA CUMINGII (Cuming's Wine Palm). *Nat. ord.*, Palmae. *Linn.*, Monoclea Polyandria.—Native of Singapore. An elegant little Palm, about 10 feet high.—(*Ibid.*, t. 5762.)

KEMFERIA PARISHII (Parish's Kamperferia). *Nat. ord.*, Scitamineæ. *Linn.*, Monandria Monogynia.—Native of the Moulmein forests. Flowers white and violet.—(*Ibid.*, t. 5763.)

FANCY PELARGONIUMS:—*Princess Teck* and *Leotard*.—"Last summer we had occasion to remark on the exceptionally fine character of the new variety of Fancy Pelargoniums produced by Mr. C. Turner, of Slough. These novelties were as much deserving of notice, on account of their diversity of colouring, as by reason of their excellent quality. We have to thank Mr. Turner for the opportunity of introducing to our readers two of the best and most distinct amongst them. Until within the last few years, this very elegant and pleasing race of Pelargoniums was rather overdone with heavily-coloured flowers, both light-coloured and bright-coloured varieties being more sparingly met with. Mr. Turner has been for some time working with much success amongst the latter group, until it has been brought up to a high state of perfection, both as to size, form, and brilliancy; and now he has hit upon a most decided advance in the light-coloured group.

"*Princess Teck* is a remarkably pleasing flower, and quite unlike any other variety of recent date; its finely-shaped stout-petaled flowers are white, with slight blotches of rosy carmine on the lower petals, and a much larger feathery patch of violet-rose on the upper ones; it will make a most attractive stage and exhibition flower. *Leotard* is a rich, smooth, rosy carmine, with a blue dash on the upper petals, a clean white throat, and a narrow, evenly defined white margin."—(*Florist and Pomologist*, 3 s. ii. 49.)

NEW BOOK.

A History of the Vegetable Kingdom. By W. RHIND. London: Blackie & Son.

VERY difficult to accomplish, and very rarely successful, is the effort to write popularly on any science. The man who is master of it seldom knows how to detail it takinglly, and he who writes takinglly on it is usually superficial, and, therefore, prone to incorrectness. The work before us has almost, but not altogether, surmounted the difficulty, and this new edition, corrected and supplemented, praiseworthy effects the purpose,

as announced in the preface, "To furnish comprehensive popular descriptions of those plants which are the most interesting from their usefulness, from their beauty, or from the peculiarities of their form and habits, and also to give the physiology, history, and classification of plants in such detail as may be of utility to the general reader, and may lead to a systematic study of botanical science." The volume is profusely illustrated, and the illustrations are beautifully executed. There are forty-five full-page engravings, many of them coloured, and about three hundred woodcuts. The interest and usefulness of the volume are increased by treating of plants in groups, not groups brought together by their botanical characters, but by the uses to which they are applied. Thus there is a chapter on spice plants, another on dye plants, others on medicinal plants, gum plants, garden plants and their culture, and so on. We have no space to spare to give an extract sufficiently lengthy to afford a just estimate of the book, but we assure our readers that if they desire to attain, or to excite in another, a knowledge of plants divested of dry scientific details, this volume will enable them to effect their purpose. It now has a copious index, and though few unusual botanical terms are employed, there is a good glossary of them.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

The second February meeting was held on the 15th ult., the President being in the chair, and he nominated Mr. Pascoe as one of the Vice-Presidents for the ensuing year in the place of Mr. Stainton.

Mr. Butler, of the British Museum, exhibited a living specimen of a Grasshopper with long antennæ. Of this a large swarm had alighted upon a vessel at sea near Whidah, West Africa. It was remarkable for a strong spine on the front of the head and a black face, the remainder of the body being of a delicate green, which after three days' exposure to a heavy wind and storm became of a pale brown colour. The specimen underwent a long fast in the vessel, but has since devoured some cooked meat.

Professor Westwood exhibited specimens of several parasites belonging to the genera *Nycteribia* and *Strebla*, which infest species of bats in Ceylon. They had been mounted in Canada balsam by Mr. Stanforth Green, of Colombo, and formed very beautiful objects for specific examination.

Mr. Frederick Smith exhibited an extensive series of honey Bees, of the genus *Apis*, from various parts of the world, with a view to the determination of their specific variation and geographical range, and in the hope of obtaining assistance from the collectors of these insects. It was especially necessary that individuals of the three kinds of which each society is composed (males, females or queens, and workers or abortive females), should be examined, as well in the cells and honey-comb, as the workers, which so greatly preponderate in number in each hive, offer but few characters serving to distinguish the different species from each other. Amongst the species exhibited was an apparently new one from Japan, of which Mr. Smith had only seen a single queen. It closely resembled the common *Apis mellifica*, as did also a species, of which he had obtained individuals of all the sexes from Mr. Woodbury, who had received them from the Cape of Good Hope. The cells of this species are, however, one-tenth smaller than those of our common honey Bee.

Mr. Druce exhibited a portion of a collection of Butterflies formed in Nicaragua by Mr. Belt, in which there appeared to be ten new species, also an interesting series of Heliconian Butterflies, which, although at first sight apparently identical, were on examination found to belong to two distinct sub-families and four different genera.

Mr. Higgins read the description of a new genus of *Prionideus* Longicorn Beetles, apparently connecting the *Acanthophorites* of the old world with the *Derobrachites* of the new. The species was characterised under the name of *Ommatomenus sericatus*, and was captured near the mouth of the River Niger, West Africa, by Mr. Simpson.

Mr. McLachlan mentioned the grievous loss which British entomology had sustained in the shipwreck of a vessel containing the whole of the Rev. Mr. Marshall's collection.

With reference to Mr. Belt's collection of Nicaraguan Butterflies and Beetles, the President stated that whilst the Butterflies of the equator were as splendid in their colours as those of any other part of the world, the Beetles from the same region, for some unexplained cause, could not vie in brilliancy with closely allied species inhabiting the countries about 20° on either side of the equator, as Nicaragua and Brazil; and Mr. Wallace made the same remark on the Beetles of Borneo as contrasted with those of Java and Penang. A discussion on the geographical range of species which mimetically imitate each other also took place with reference to Mr. Butler's recently described species of *Hestina*, which he now considered to be a native of one of the islands of the Indian Archipelago.

At the meeting held on March 1st., II. W. Bates, Esq., the President, was in the chair. Amongst the new entomological works presented to the Society since the last meeting was the first part of the *Transazioni* ("Bollettino") of the Society of Italian Entomologists just published at Florence.

Mr. Frederick Bond exhibited specimens of the beautiful Moth *Heliothis armigera* from Australia, Java, Brazil, and the Isle of Wight. Mr. McLachlan exhibited *Dilar Hornet*, a new neuropterous insect with pectinated antennæ, taken in North-western India by Mr. Horne. The last-named gentleman showed some slabs formed of the inner bark of the *Pinus longifolia*, which grows abundantly on the lower slopes of the mountains of Northern India, as a substitute for cork for insect-boxes. Mr. Boyd, on behalf of Mr. Davis, exhibited some very dwarf specimens of the common Tortoiseshell Butterfly, and of the Emperor, Buff-tip, and Poplar Hawk Moths, all reared during the unusually hot season of 1868.

Dr. Wallace exhibited specimens of the beautiful *Saturnia Yamamai*, Guérin, a native of Japan, bred last year in this country from cocoons of a delicate green colour, the caterpillars of which are equally beautiful, and feed upon the common Oak, so that there was every prospect of the species being utilised in this country as a silk-producing insect. He also exhibited *Saturnia Pernyi*, Guérin, from the far north of China, which also feeds on the Oak, and forms very large cocoons. He had also reared *Saturnia Pyretorum*, Westw., from a cocoon received by Dr. Hooker from China, as that formed by the larva which is employed by the Chinese in the manufacture of silk-worm gut used by fisherman, the perfect insect of which had not hitherto been ascertained. The caterpillars of this species feed on *Liquidambar*. He also stated that he had received an order from a silk-manufacturer for 500 lbs. of cocoons of the *Ailanthus* Silk Moth, and should be glad to receive any surplus supply of these cocoons. The price offered was two francs per lb.

Mr. Jenner Weir exhibited specimens of the larvæ of the common Daddy-longlegs, *Tipula oleracea*, which were swarming in immense quantities on the surface of the ground in Greenwich Park and on Blackheath. Mr. Sheppard stated that the grass in Hyde Park had some years ago been greatly destroyed by the same insects, which had been checked by the application of soot sprinkled over the ground. Mr. Bond observed that the same insects were eaten in great numbers by pheasants, as many as four hundred of the larvæ having been found in the crop of a single bird of this kind.

A paper was read by Mr. Charles Waterhouse, containing descriptions of a new genus, and several new species, of exotic *Lucanide*. Two very interesting papers, which led to an extended discussion, were also read, "On Insects and Insectivorous Birds, and especially on the Relation between Colour and Edibility of Lepidoptera and their Caterpillars," by Mr. J. Jenner Weir; and "Remarks upon Certain Caterpillars, &c., which are Unpalatable to their Enemies," by Mr. A. G. Butler. The object of both these papers was to endeavour to ascertain how far the colours and peculiar forms of caterpillars and moths were useful to them individually, in the great "struggle for existence," in protecting them from insectivorous birds and other animals. As a general rule, Mr. Weir considered that hairy or spined caterpillars, as well as such as are gaily coloured and which do not conceal themselves, are rejected by insectivorous birds; whereas smooth and dull-coloured larvæ, which generally conceal themselves during the day, or which assimilate in their colours to the plants on which they subsist, are greedily devoured. Moths with brilliantly coloured hind wings, such as the common Yellow Underwinged *Noctua*, escape from birds by the effect of surprise caused by the sudden display of colour, as well as by the ineffectual attempts of the birds to seize them by the most conspicuous but at the same time weakest portion of their structure, which gives way. Mr. Butler's observations referred to the rejection by lizards, frogs, and spiders of various kinds of caterpillars, especially those of the common Moths *Abraxas grossulariata*, *Habias vanaria*, and *Zygena filipendula*, which, notwithstanding their very conspicuous appearance both in the caterpillar and perfect states, are nevertheless enabled to maintain a numerical preponderance when compared with many other less strongly marked species.

SETTING GRAPES.

ALLOW me to advise those of your readers who have a difficulty in getting their Grapes to set, to try the experiment of leaving the young shoots untied, and, as far as possible, undisturbed, until the setting is over. I think they will find that this will make a considerable difference in the matter. Some time ago we tied in the earliest shoots of some pot Vines, as they were coming in contact with the glass, and in looking over them a short time afterwards, I noticed that the bunches on the untied shoots were coming into bloom before those on the earlier tied-down ones. As earliness was an object, and for the sake of experiment, we left the remainder of the shoots free, and these, without exception, set their fruit first and thickest. Further, we have an old Muscat Vine in our early Hamburg house here, and as it is generally in bloom about midwinter, it seldom sets its fruit thickly. Acting upon the above hint, however, we this season left the shoots untied until the fruit was ready for thinning, and it has set much more thickly than usual, though the weather at the time was very unfavourable.

I think bad setting at any time is the result of weakness, and it is probable that the tying-down of the shoots; by check-

ing the flow of sap, may weaken the energy of the plant at a critical period, and prevent fertilisation. I have thought it worth while, at least, to state the above facts, and would be glad to know if any of your correspondents have made similar observations.—J. SIMPSON, *Wortley Hall*.

THE PORTABLE ORCHARD.

(Continued from page 195.)

Now fit the scion on the stock, as in *fig. 9*, slipping the point under the flap and the point of the tongue into the slit made for it, taking care to bring the two slanting portions into close contact, and, above all, being quite sure that the layers of living tissue are accurately joined. This can always be managed for one side, and if the cuts on the stock have been made of the right size, the inner bark will fit on both sides. The outer bark of the stock is generally much thicker than that of the scion, therefore the scion will stand a little within the outer contour of the stock.

You must then bind the scion and stock firmly together, but not so violently as to bruise either of them. You should begin about the middle, and first work downwards, and then wrap the yarn regularly up; and if you have put the scion properly on, the two slanting pieces at the top will be brought into close contact by the presence of the band. Many treatises direct this cut to be made sloping the other way, in order to form a sort of notch at the top, under an idea of holding the scion on by it, but such an under-cut prevents the surfaces being pressed into contact by the tie, therefore make this cut slope in the way I have described; the top of the stock is the most important point for the union to be perfect.

Finally, apply a coating of grafting wax or clay; I prefer the wax. There is a sort manufactured in Paris that is used cold, and is the best I have met with; but any of the common sorts made by softening pitch with lard or tallow, &c., and used warm, are far more convenient than clay, and a dozen grafts can be covered up with the wax in the time required for claying one. If, however, you like to refresh your early memories of clay pies, the application is made thus:—Take a piece of clay about as large as a rather small egg, roll it into a round ball in your hands, then putting it into the palm of the left, beat it out into a flat cake with the right. Take this cake and bend it round the joint, taking care to leave all the buds of the scion above it, press it firmly all round, and point it both upwards and downwards into a spindle-shaped form. You will find it necessary to use cinder dust or dry sand to enable you to accomplish this pastry-making neatly. Of course in using the grafting wax only a small quantity is applied with a brush, so as just to make the joint air-tight, and there is no fear of smothering the lowest bud, which had is finally to become your tree. The bud on the stock below the cut first made is merely for the purpose of keeping the sap at work on the side opposite to the scion, and if it pushes it must be stopped by pinching the end off, and later in the season the shoot must be cut clean off.

Where the stocks are worked close to the ground, to prevent evaporation, and at the same time to keep frost from the roots, cover up the ground to the top of the stocks with ashes or cocoa fibre. If the weather is very dry water well once a-week, and a little guano added to the water will stimulate the growth very much. You must remember that the success of the operation, supposing the joint to have been quickly and correctly made, depends upon vigorous root-action. Any check to the growth through cold or drought is dangerous; in working small numbers both can be securely guarded against, and very few failures ought to occur. This is the form of whip graft I recommend.

When the stock is very much thicker than the scion, as in the case of regrafting an old tree, and in the case of very thin scions, *crown grafting* is to be preferred. The forms of crown grafting are most numerous; a modification of Dubreuil's is the best I know. He, however, advises the under-cutting I objected to above; but, excepting on this point, the plan I am about to describe is mainly his. In grafting, speed is all-important, for if the surfaces are exposed to the air, so as to dry or change colour, there is little prospect of success, and it is

surprising to see how very quickly the sap is dried up in a warm spring day. On this account I advise you to practise on branches of any tree until you can work with ease, always following the same order until you have no occasion to think about your steps. No work is ever done well when the mechanical parts of it require thought at the time. I mention this because, though in crown grafting it is better to begin with the scion, nevertheless, for the sake of uniformity, I advise you always to begin with the stock.

Cut off, then, the top of the stock as before, and, secondly, cut a slit down through the bark for a couple of inches, beginning a little to the right of the lowest point of the slanting top; thirdly, with the ivory spatula of your knife detach the bark on the right side of the slit; if the proper season has been hit the bark rises quite freely.

Next take the scion, and proceed exactly as before recommended for small-wooded scions as far as the first three cuts, and then, fourthly (*fig. 10*), cut a very thin slice off the edge which will go against the undisturbed side of the bark of the stock when the scion is slipped down under the raised portion of the bark; this slip must meet the cross cut. I may observe that by this method the left-hand corner of the scion overlaps the top face of the stock in such a way that the alburnum must come into contact at some portion of the section, and this diminishes to a great extent the chance of bad fitting.

When the scion is pushed down under the bark, so that the raw edge of it is in contact with the side of the unraised bark, and the slant faces are touching, it will sometimes, when the bark of the stock is very thick, be difficult to get the bark bound closely to the wood, or the right-hand side of the scion. In this case put a bit of stick outside the bark, so as to press it into the hollow, and then bind up as before, and cover with grafting wax or clay.

In the case of large stocks—i.e., an inch in diameter or more, it is wise to insert two scions on opposite sides; one of these is to form the leader, and the other to be suppressed, but for the first season after grafting the tree will have a short supply of leaves to maintain the roots in health, and a few more scions give more foliage, and at the same time diminish the risk of failure in the graft.

As soon as the shoots from the scions are about 6 or 8 inches in length, the ligatures require loosening. This must be done cautiously, for very little will break the still soft tissue which unites the stock and scion. Bind up again with open turns of the yarn, and only tightly enough to prevent the scion slipping; at the same time put a stick into the ground and tie it to the stock below the graft, then tie the scion and stock to the stick at the junction of the graft, and the scion at one or two places above, so that no wind can move it. When branches of trees are grafted the scions must be secured similarly, by hindering the stick to the branch firmly by at least two ligatures below the graft.

These steps are tedious in description, but really require very little time to execute. I have grafted four hundred stocks in one morning and the next afternoon, working from 9 to 1 o'clock, and from 2 to 6 o'clock; that is at the rate of fifty an hour, and of these not 2 per cent. missed. Work uniformly, and try to make the cuts at one stroke of the knife. At first you must make several shavings to get the cuts in right form; but as soon as you have learned what they ought to be, cut boldly, and by hacking up any odds and ends you will soon work expeditiously and accurately. I do not know whether the goodness of their Apples depends upon the Americans' method of grafting or not, but perhaps the "whittling" is only a way of keeping our cousins' hands in practice for this art; at any rate, whittle away till you can cut truly.

As soon as the young shoots have made ten leaves each, pinch off the ends of all but the lowest. The shoot springing from the eye which is just above the stock, ought to be made the main stem of the young tree. By pinching the ends off the shoots from all the eyes above it, you make this shoot the leader. You will find this treatment produce a much stronger shoot than if you allow all to grow freely. In the case of Apples and Pears, you may form a very good tree by allowing the highest shoot to become the leader, and this is the way in which most gardeners proceed; but in the case of stone fruit you will never get a good tree from using an upper shoot for the leader. The old bark of the scion is sure to become indurated and the upper shoots feeble, giving the tree no chance of recovering from the



Fig. 9.



Fig. 10.

shock arising from an inadequate supply of foliage. This is the reason why I have insisted so much upon taking the utmost care of an eye close above the stock; besides, the deposit of wood from this bottom shoot covers over the head of the stock in a very short time, leaving no wound, and I feel sure that the sooner all the wounds are healed over the better for the health of the tree. Though the same degree of induration does not take place in the Apple and Pear as in stone fruit, still you will find this base shoot by far the best for their leader. During the first summer nothing more is needed, unless the ligatures become too tight, when they must be loosened and retied.—W. KINGSLEY.

(To be continued.)

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

(Continued from page 81.)

If Vines cannot be planted at the end of October, it is better to defer doing so until the end of March. The latter period is that which I prefer for the open walls, and Vines propagated from eyes or cuttings should always be chosen in preference to those from rooted layers. The Vines now under consideration I raised from short-jointed cuttings. In the last week of March the border, after having remained with a rough surface during the winter, was levelled, and holes sufficiently deep and large were dug for the reception of the roots, which, as the balls were relieved from the pots, were carefully uncoiled in order to preserve every fibre possible. Then to stout stakes (I am supposing a man to be carrying out the operations without an assistant), previously driven firmly and in rather a slanting direction into the soil at 6½ feet apart and about 3 inches from the wall, the Vines are made fast, first winding haybands round them to prevent the bark being chafed, and then passing a piece of tarred cord round the hayband and the stake. In tying judge the level to which the new soil will have to be raised so as to occupy the exact distance up the stem of the young Vine to which the soil surrounded it in the pot. The stem is kept firmly in its place during the distribution of the roots, effectually preventing those convulsive twitchings which trees too frequently undergo in planting, as if their fibres were as elastic as indianrubber, which they are not. Spread the roots in layers, if there are enough of them, horizontally in circles, and cover each layer carefully with fine soil, which, if dry, must be made to close round the fibres by gently watering from the spout of a can, or, still better, from the rose of a watering-pot; but if we must tread, let us "tread softly," for it is a barbarous practice to jump violently upon the tender roots; and if their points are made to repose at a slight angle upwards they will be all the more likely to retain a horizontal position afterwards, which will be very conducive to the future fruitfulness of the Vines.

I planted my Vines, and continue to do so, as above, having cut each down to four or five eyes about a month previously. A mulching of decayed leaves was placed over the surface beneath which their roots extended, a Box edging was temporarily planted 1 foot from the wall to prevent accidental injuries from the iron roller and other causes, and a 7-feet-broad gravel walk covered the remainder of the border. The additions to the width of the border which I mentioned in my last paper are planted as a flower border. Waterings in the

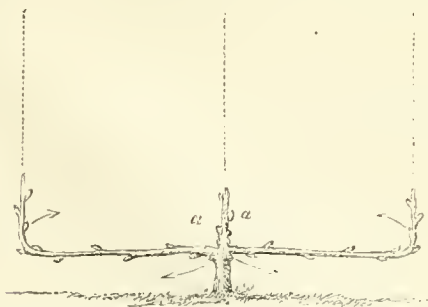


Fig. 1.—First year's appearance at the November pruning. The dotted lines showing the places to which the unripe wood is cut down. The arrow heads show the buds from which laterals are to be produced in the following year. *a*, *a'* are the trial buds.

summer were strictly given to the young Vines. And now begins the system of training them.

It is difficult for persons not practically conversant with training to comprehend at once the explanations of a writer,

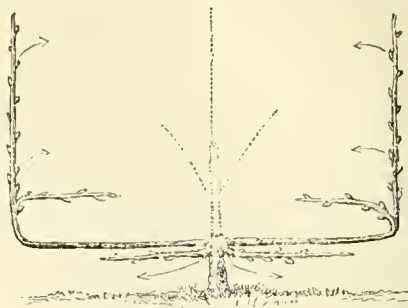


Fig. 2.—Second year's appearance, and the places occupied by the laterals produced by the trial buds during the second season.

however simple and straightforward he may endeavour to make them. I therefore send sketches of the appearance of the Vines from the first to the fourth year of my method of training against the walls of the house, which are 40 feet high. When I recommend the first main branch laid in to be cut away in the autumn of the fourth season, I do not literally mean what I recommend, for in practice, supposing us to be

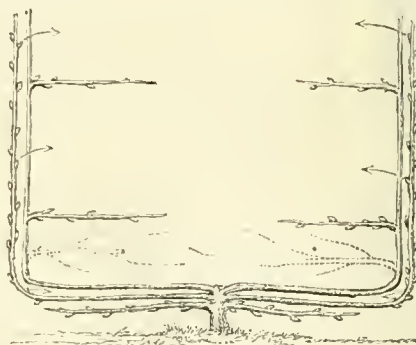


Fig. 3.—Third year's appearance at the November pruning. The laterals, having produced their fruit, are to be afterwards completely cut off to the mother branches, as shown by the dotted lines.

training a Vine, as shown, to the height of 50 feet, that first branch would probably be required to do duty above a year or two longer, and young laterals must be trained from the outermost branch below, in order to keep the whole surface covered with bearing wood, which can be obtained from two or three-year-old canes as freely, or more so, than from those one year old. It is advisable, however, to cut away the old limbs as soon as possible, for what goes to support them is so much taken from younger and more fruitful wood. How frequently do we see immense old sprawling limbs of Vines unfruitfully occupying space, not arranged according to any system, and which cannot be dislodged without laying bare the whole front of the wall, in order to cover it with bearing wood.

From practice and results I can confidently recommend the above system for either high or low training. It took me more than twice four years to consider and arrive at it, simple as it is; and for some years I annually found myself with too many crowded branches against the wall, with which I did not know what to do. I will now explain how this evil is to be guarded against.

We shall suppose the young canes to be breaking well and strongly; select three of the strongest shoots, handle them carefully, and with nails and shreds secure to the wall the lowest pair horizontally right and left of the stem; allow one shoot to each Vine to grow upright; and when these upright shoots have made five joints or so pinch off their heads to prevent their becoming monopolisers of the sap, as they are intended merely for a year or two to encourage root action and perform for the plant the office of lungs. The horizontal shoots must be allowed to grow without stopping, and to take an

upright direction when they have reached the arm's span of a man, measuring from their stems. If the Vines show fruit the bunches must all be picked off, for to permit them to ripen fruit the first or even second year is a certain way of destroying their constitution. What laterals (young shoots), they throw out at the axils of their leaves during the summer must be shortened by degrees in September, and the further growth of the ends of the branches stopped. About the middle of October clear the laterals entirely away, and encourage the ripening of the wood by freely admitting the sun. At the middle of November the horizontal branches, if they are matured so far, which can be judged by the brownness and hardness of the canes, are cut over three or four eyes above the

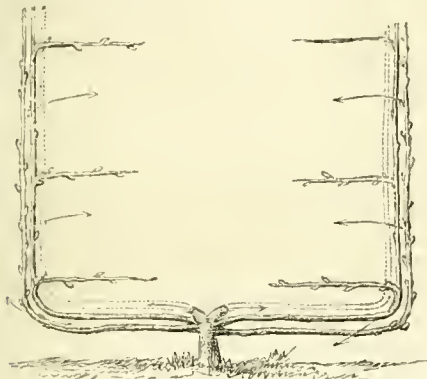


Fig. 4.—Fourth year's appearance after the November pruning, showing how the first main branches are cut away, as represented by the dotted lines. The arrow heads point out where new ones are immediately to be trained in their places.

vertical turns; but if they have not ripened their shoots to that extent, cut them so as to be as nearly as possible of uniform length. The central branches or lungs, shorten back to three or four eyes, and thus the first year's pruning and training is complete. I lay particular stress on the word pruning, for when this operation is left to be performed in the spring, there is no tree so likely as the Vine to suffer from what is termed bleeding—a discharge of the sap at the incisions made by the knife; and it is found sometimes very troublesome to stop. One of the best methods for staying such bleeding is to apply a heated iron to the part cut, and then immediately to run melted sealingwax upon it, as mentioned in page 162. Other applications which are employed for the same purpose are cow dung and clay, quicklime, whitelead paint, Thomson's styptic, &c. It is, however, far better to prune at a time when all these difficulties can be avoided.

There is one chief preventive of mildew, and I wish to impress it particularly on the cultivator's attention as being truly a "stitch in time." Keep a sharp look-out for the first appearance of this insinuating pest. It always attacks the young immature foliage first, and then the half-grown fruit about midsummer. Now, the instant a speck of it is perceived upon the young laterals at the axils of the matured leaves, or on the young foliage and points of the growing shoots, pinch the former and the latter entirely away, or cut off at once the points of the growing shoots. This will do away with the feeding and propagating grounds of the fungus, as it cannot begin to prey upon the matured foliage—that is safe, unless the mildew be allowed to go on unchecked. Possibly, after the thinning-away of the young spray, the green fruit may not be affected; but should it become so, procure some finely powdered flowers of sulphur, tie it up in a piece of muslin, dust it over and about the bunches, and the Oidium Tuckeri will be overcome.—UPWARDS AND ONWARDS.

(To be continued.)

NOTES AND GLEANINGS.

HORTICULTURAL CONGRESSES THICKEN.—We have received the programme of one to be held at Copenhagen, from the 6th to the 10th of July next, in conjunction with the Universal Agricultural Congress.

—At the ROYAL HORTICULTURAL SOCIETY'S PROVINCIAL SHOW at MANCHESTER, in July, it is proposed to have some afternoon meetings, at which papers on gardening may be read,

and discussions held on the subjects that may be brought under the notice of the meetings. Those who intend to contribute papers are requested to give notice to Mr. Moore, Botanic Garden, Chelsea, on or before the 30th of June next.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, in planting it is of the utmost importance to pay every attention to a proper rotation of crops. When Celery is grown in what are called Scotch beds, the latter make capital *Asparagus* ground. The preparation consists in trenching the ground much deeper than the rest, and in burying a considerable quantity of raw vegetable matter in the bottom of the trench, as refuse vegetables, weeds, or half-rotten leaves, with which a little manure had been blended for linings in the previous year. The upper part of the beds has some rotten manure, of course, for the Celery. In taking up the Celery for seed, the bed is broken up to a great depth, also the alleys, and thrown into a ridge, which ridge remains fallow until planting time, when it is merely levelled down. It should be planted now. *Broccoli*, let a sowing of winter and spring sorts be made forthwith. *Cape Broccoli*, and *Cauliflower* for Michaelmas, may, however, be sown a week or two hence. *Potatoes*, a full crop may now be planted. Kidneys with well-protected aprons, or any other early kinds, planted now, will be a little later than those planted in February. Planting, however, requires a little care, the sets should be placed in baskets, in single layers on damp litter, and carefully handled. They should by no means be planted during either sunshine or wind. Those with sprouts 2 or 3 inches long, if managed thus, and covered at night until the second week in May, will closely succeed those in frames. See that plenty of *Green Kale*, *Savoy*, *Brussels Sprouts*, *Leeks*, *Scorzonera*, *Salsafy*, *Beet*, &c., is sown without delay. Continue successions of *Horn Carrots*—indeed, sow a bed every month from January to September.

FRUIT GARDEN.

As soon as the weather becomes more congenial to the opening bloom, protecting materials may be gradually removed from Peach, Nectarine, and Apricot trees, but not in such a way as to subject the bloom to injury from too sudden exposure. Where canvas screens on rollers are employed, they should, of course, be rolled up by day, and let down at night; but if the night should become warm, they need not be lowered quite down, as a little extra air will be more beneficial than otherwise; for blossoms of Peach and Apricot trees are not unfrequently injured by too much covering. When Peach and Nectarine trees are sufficiently advanced, proceed gradually with disbudding, but remove only a portion of the buds at once, selecting the strongest first, and going over the trees two or three times at intervals of about a week. Thus it will be possible to avoid checking the trees to the same extent as when disbudding is done all at once. Look carefully over Apricot trees, and destroy the caterpillar wherever it is found. It is sometimes very destructive to the foliage and fruit when neglected for a few days. Figs must soon have their winter protection removed, and be thinned and tied. If possible, the bloom of the choicest kinds of Pears should have a little protection; when the trees are against walls, this is easily afforded, but with espaliers and low standards the difficulty is greater. For the latter a slight frame shaped like an umbrella, and covered with canvas, might be fixed over each tree; of course, the frame should be larger than the diameter of the tree. For espaliers, a width of two of canvas should be fixed on a frame over the line of trees. If this kind of protection be placed 2 feet above the trees, it will keep them safe from any frost that may now be expected, provided it is not accompanied by wind.

FLOWER GARDEN.

Look over all recently transplanted shrubs and trees for the purpose of ascertaining whether or not they are securely staked, for if allowed to be rocked by the wind the tender roots are often broken off, and the plants are consequently deprived of their only means of obtaining nourishment. Mowing will soon require attention, therefore have the turf swept, well rolled, and made thoroughly firm without loss of time, and remember if mowing is deferred till the grass has become long, it will require much time and labour to again bring the turf into proper order. Put walks and edgings in order.

GREENHOUSE AND CONSERVATORY.

Proceed with staking and tying-up plants which require assist-

ance of that kind; but if former directions relative to growing plants with short-jointed wood have been carried out, stakes may to a considerable extent be dispensed with, although some will be necessary to give the plant its desired shape, but on no account use more than will effect that purpose. Turn all plants frequently round in order that they may not become one-sided. The drainage of young hardwooded plants should often be examined, in order to see that it is effective. At this season several New Holland plants are, as a matter of course, either in bloom or approaching that condition; they will, therefore, require to be well supplied with water, more especially large specimens not shifted since last season. Cuttings struck for a stock of winter-flowering plants will now require potting-off. As it is not desirable that these should be grown to a large size, keep them rather short of pot room. A hot-water pit will answer best for growing these and similar plants. They can then be brought close to the glass, and by a little attention will become by the autumn stout and bushy, with well-ripened wood; they may then be brought into bloom at pleasure. Shrubs planted out in beds in the conservatory will require occasional waterings. Large specimens in tubs or pots must also have a liberal supply, provided the drainage is effective. This is the period for the free use of liquid manure, but take care that it is clear, and not over-strong. Large Orange trees while growing are fond of it; when these produce gross wood, disbud or remove it altogether, and let the lower shoots take its place; this will induce fruitfulness by moderating the growth. Many conservatories are very unfit places for Heaths, being generally too lofty, and kept too warm. Some of the winter-flowering varieties, however, are very ornamental, and should be largely employed in conservatory decoration during the spring months. As soon as they have flowered, let them be pruned back, and give them a liberal shift when they start into growth, using good fibrous peat, and if they are well attended to during the growing season, they will overcome any injury they may sustain, through occupying an unsuitable position while in bloom.

STOVE.

The greatest care will be necessary to prevent softwooded stove plants from becoming drawn; as these will now be making rapid progress they should have a large share of light, shading only during the middle of a bright day. Some of those potted early may now require a second shift; in this, however, be guided by the purpose for which the plant is grown. Take every favourable opportunity of fumigating to keep down insects, and syringe frequently, but in doing this take care not to injure the young foliage of large-leaved plants. Should twiners or specimens planted out in beds become infested with insects, these should be cleaned with Gishurst compound. See that growing Orchids have abundance of atmospheric moisture with a liberal circulation of air early in the morning, shutting up closely at a rather early hour, and take care to be moderate in the use of fire heat, in order that a pure atmosphere for the night may be insured. Growing Dendrobiums will now require liberal supplies of water, and let plants on blocks be frequently syringed. Most stove plants will succeed in a mixed greenhouse, where a medium between the cold greenhouse and the stove is observed.—W. KEANE.

DOINGS OF THE LAST WEEK.

THE very changeable weather has rendered much of our work of an intermittent character. After a very windy night, which considerably tried doors and sashes, as well as fresh-planted trees, we had a fall of about 2 inches of snow on the morning of the 20th, with a keen north wind, and still a rapid thaw. Though the snow was not thick, we managed by rolling to secure a good quantity in the well of an ice house. The thaw enabled us to roll the snow into huge firm lumps, which were placed in a barrow by tilting the barrow sideways to them, and the lumps were then wheeled at once to the well. But for a long covered passage we would have had a cart, but so long as we could roll the snow near the well on clean grass, we should have gained nothing with its help, but rather the reverse. Such damp snow needed no watering, but was easily beaten firmly together, and after a few weeks will come out almost as good as ice. Snow will not roll unless it is soft on the surface, and does best when the layer is not thick. We collected a considerable quantity in six or seven hours, and after that the snow was too thin for us. When snow has been more light and feathery, we have used a little water to consolidate it under

the rammers. This year, in many parts in the south, imported ice will have to be resorted to, and where it is easily obtained it will be found very economical for merely cooling purposes, the blocks well covered up lasting so long. For hard freezing, when the blocks are broken small it is little, if any, better than our pond ice. Unless we secure ice from pure good water, it cannot be used as lumps in decanters of water in summer. The ice formed from snow is hardly so firm as pond ice, and when rolled close to the surface of a grass pasture is chiefly useful for keeping jellies, butter, &c., firm, and for cooling wine, as it is not pure enough for other purposes. We have several times imitated the blocks of Wenham Lake ice by placing ice from 1½ to 2½ inches in thickness, in six or seven layers neatly on each other, watering them before a frosty night, and leaving them to the frost, when they became a solid block, and such a block placed in an ice tub, protected with woollen cloth and sawdust at the bottom and sides, with the surface exposed, did service for a long time for keeping butter, jellies, &c., cool and firm. We hope we shall have no opportunity for repeating the experiment this season.

KITCHEN GARDEN.

We managed to get in one piece of Onions in very good order, but it will be some days now before we shall be able to sow more small seeds. The chief work has been hoeing and earthing-up Cabbages, turning over vacant ground, and preparing for planting Sea-kale, Asparagus, Artichokes, &c. Planted out a bed of strong Cucumber plants, and but for the snow and the north wind would have planted out in a small pit heated by hot water. This would have been done on the 19th, but the soil was not quite warm enough to please us; but had we known that the 20th would have been so boisterous we would have carried the plants to the pit and left them unplanted, in their pots. Much depends on the careful moving these plants, even to the distance of only 100 yards. A deep basket lined inside, with a cover over it, is useful at this season, when the plants are large. We have known the finest healthy plants become unhealthy, and ere long insect-covered, from a few minutes' exposure to a cold wind. We would rather wait a little than run the risk. When amateurs obtain a few Cucumber plants for their beds they cannot take them home too safely, or too completely shut in from the weather. If secured in a box, it is well to let the box be in the bed before unpacking—in fact, if merely the lid is taken off for a few hours all the better. We shall never forget seeing eight lights of frames planted in the middle of March, and with good strong plants brought from a small two-light box; and though there was everything that could be desired as respects heat, water, and soil, the plants never flourished as they ought to have done. We have no doubt that moving them in open riddles in a keen frosty wind, and keeping them out in it longer than was necessary, was the cause of the disappointment. We have known many cases where a man would carry home in a box some nice plants surrounded with soft warm hay, and the box itself enveloped in a cloth—all as it should be; and then he would do all the unwrapping out of doors close to his bed, doing it carefully so as not to hurry, examine the plants all over to see if all were right and free from insects, put them in his bed, and then wonder why they did not go on so well as their former neighbours which were exposed to no such checks. The advice deduced from such observations would be, Place your box in the bed at once, unpack it there with a cloth over you to keep out the cold air, and leave the plants in their pots, otherwise properly attended to, to recover from the effects of the journey before finally planting them out. Bear in mind that all plants feel a sudden transition in temperature, and feel it all the more in proportion to their tenderness. As the season advances less care will be necessary; but it is well to keep the principle in mind, even when no artificial heat is given under glass.

FRUIT GARDEN.

The boisterous snowy morning of the 20th induced us to place some laurel branches over Peach trees on the wall, which we thought might do this season without any protection. The wind, also, being due north, though there was no frost, led us to sprinkle a little rough hay over the most forward Gooseberry bushes, as the following day being Sunday, we could not have the means of doing it then. We have never any trouble with such sprinkling. The wind soon scatters it from the bushes; but several times we have saved a heavy crop by this method, when all left exposed lost the young fruit. Very little goes a long way, and the sprinkling acts in two modes—namely, sheltering from frost, and keeping the sun which generally follows from acting directly on the young fruit. Even on the latter

account alone, we have had heavy crops on a north border, when they were destroyed on an eastern and southern aspect. The warmth from the sun thawed these on the north border gradually, without directly shining on them when frosted.

In our *fruit houses* we are feeling the effects of the previous summer. In our orchard house, though the trees in pots are fair, they are not equal to what they were last season, and we have taken out and plunged in their pots out of doors some Plum trees that were loaded with fruit last season, as they have few fruit buds on them. This was, no doubt, partly owing to the heavy crops, which were not thinned enough; but we have had equally heavy crops year after year before without reshifting, and therefore we think the result is more owing to our scarcity of water, and the kind of water we were obliged to use—undiluted sewage from the mansion. Though we shall have a fair show of blossom buds even on Plum trees, still they seem to have suffered in this respect more than Peaches and Cherries, which are fair, though they also were extra loaded with fruit. Our Vines, which want renewal, and have wanted it for years, though bearing very heavy crops, do not seem as if they would show so freely as usual. We have wanted to have a gradual renewal for a number of years, but every season has brought its extra work. The chief difficulty hitherto has been thinning away enough of branches, for though the wood was not strong, it always cut with the knife as hard as a piece of oak. This season, though the Grapes ripened and coloured well, we could see that the Vines were more distressed than usual, and we find the wood is smaller, and not so firm to the knife. Most likely we shall have enough, if not so much to cut away for tarts, &c.; but for great plenty of fruit we are fonder of firm hardwooded, than even of stronger growth with a bit of pith in it. However, we expected this result. In the height of the excessively dry weather, as most of our Vine roots are out of doors, and pretty near the surface, the Vines several times showed their distress after noon in a bright day, even though we shaded the glass a little with whitened water.

We were afraid all along about the *sewage water* being too strong, but we could not dilute it, and were placed in a fix—we must use it or none. We used it, as we thought, carefully, depending on the rains that would come, though afraid all along that the roots would be injured, being so near the surface—a matter of importance when strong liquids are used. If ever we should be placed in a similar fix again, rather than use such strong liquid we would shade more and mulch the border more, so as to keep the moisture near the surface from evaporating, whilst the heat at the surface would tend to raise vapour from greater depths. We do not find any differences in the wood in Peaches, Cherries, Figs, &c., that were supplied with similar water, but there is a difference as respects firmness in the young wood of Vines and Plums that were so treated. We are the more inclined to think that the extra rich water acting injuriously on the roots had something materially to do with it, as from the heat of the summer, if the wood had been a little smaller, it would also have been harder and firmer under ordinary circumstances, and if supplied with more suitable water. The last season here was, as respects necessary moisture, gardening under great difficulties. We mention the matter prominently for two reasons—first, to show the importance of having water for a modern garden without being dependant merely on showers; and secondly, for repeating the caution frequently given, not to use manure-waterings of any kind too strong. We know of a number of cases in which fruit trees, and even Roses in pots, were greatly injured last season by strong manure-waterings, and mostly in cases like our own, where such water only could be used, or the plants allowed to perish from dryness. In the cases referred to we regret we did not do more with deeper mulching. We believe that in the case of roots out of doors, the autumn rains would wash away what otherwise might not be pleasant to the young growing roots this season; and we find, therefore, that the young shoots of Vines are coming perhaps a little stronger than usual, though taken all in all, not so thickly studded with fruit. We recollect of one instance in which a house of fine young Vines was done for by a heavy watering from a cesspool that took all the drainage from a large stable. They languished after the undiluted watering, got worse and worse, and died next spring. We were assured the liquid was so strong, that it ought to have had at least four times the quantity of pure water mixed with it.

Peach blossom is now bold and full, and beginning to fall after setting in the earliest orchard house, and coming into full blow in the second. A few Plum trees are opening their blossoms, but Cherry trees have as yet shown massive swelling

buds, and have not opened. Figs are showing like small peas on the sides of the shoots, and in most of these cases the terminal bud has been nipped across, which will arrest mere elongation, so as to give a help to the young fruit, and once the bud thus stopped pushes from its base, it is easy to select one or two shoots to be left or stopped according to the system of growth adopted.

Trees in pots have been gradually watered, and also those against back walls, as previously indicated. Here we have seen no sign of an insect as yet, but in the Peach house we have had to smoke lightly once, and have brushed a few young shoots that had a little fly on them, with quassia water. If much artificial heat is not used, we like Peach trees to be in a rather dry atmosphere when in bloom, though in early forcing, and when much fire heat was used, we have ventured on a gossamer dewing of the blooms with good effect. For this purpose we used the nozzle end instead of the rose end of a syringe, and so regulated that with the thumb, that the moisture which escaped was more like fine dirty vapour than what we associate with the heaviness of water. This is best done when the day promises to be sunny, and about nine in the morning. Those who have not learned thus to manage a syringe should not try the experiment, as a stream of water would wash away the pollen, whilst a gentle application nonishes and opens the pollen vessels. Be this as it may, we think that the less of steaming and using evaporating troughs whilst the trees are in bloom, the better. In very severe weather it is better to lower the temperature within the point of safety; but after the fruit is fairly set and swelling, if a temperature of from 55° to 60° is kept up at night, evaporating pans or troughs set on the heating medium will be an advantage. For this purpose we use soot water and other manures, and when syringing is resorted to we often use clear soot water. The evaporating pan is far better and safer than raising vapour by pouring liquid at once on a heated surface.

In vineries and peacheries it is well to have a little sulphur on the heating medium, provided the temperature of this is not higher than from 160° to 170°, as the fumes then given off will be safe, and will help to keep the houses free of red spider. The most critical time to use sulphur in a vinery is just when the fruit is setting and shortly afterwards. A little extra heat then will easily cause the sulphur to blotch the little berries, and perhaps the Grape most subject to this infliction is the Black Hamburgh, the berries of which are very sensitive when young. At such time, either there should be little sulphur on the heating medium, or a little air should be given at the apex of the roof by night as well as by day.

Proceeded with out-door pruning, nailing, and planting. In planting young trees now it is well to defend them a little with a few evergreen boughs, so as to break for a month or six weeks the force of the wind and the sun's rays, just to keep the top from transpiring freely, until the roots are working afresh in their new quarters.

ORNAMENTAL DEPARTMENT.

In planting some specimen trees and shrubs, we have slightly protected them as above. When so treated at this season we have found many do as well as when planted early in the winter or the end of autumn. The reasons for this were lately given, or at least an attempt made to assign a reason. Nevertheless, we decidedly prefer the end of October and the beginning of November, and chiefly because the heat then in the soil prompts to a fresh and immediate action of the roots. In making this slight screen, care must be taken that the screen does not touch or flap against the protected plant, or the remedy by bruising and chafing would be as ruinous as the evil to be avoided. The screen should therefore be fixed at a little distance from the plant, or if merely a slight protection to a small plant is required, three laurel branches fixed at a distance firmly in the ground, and then the points firmly tied together, so as to form the point of a rough cone over the terminal shoot of the young plant, will afford all the protection that will be necessary.

In reference to what was stated lately as to *protecting trees, &c., from hares and rabbits*, though looking on wire as the best safeguard, we may mention that about a fortnight ago we had a number of fine young trees, peculiarly exposed to the depredations of rabbits, syringed from the nozzle of an old syringe with a thickish mixture of water, lime, soot, and cow dung covering the bottom of the stem and twigs to the height of from 12 to 18 inches, and as yet not a tree has been touched. Disappointed in this direction, the nibblers turned their attention to some Laurels, and would have finished them, but the

mixture seems to have sent them elsewhere from the Laurels. It is astonishing how quickly field mice, when numerous, will clear off every bit of bark and even of alburnum from a clump of Laurels. In this neighbourhood these mice are, if anything, more injurious to young trees than even rabbits, and are worse to exterminate.

To protect young trees with clean stems of from 2 to 3 feet in height, we have seen no plan so simple and so effectual as taking a small handful of straight wheat straw, placing it round the stem, and fastening it with a band in two or three places. We notice that where this was done about three years ago, the band for fastening being merely three or four straws, the straw is beginning to fall from the stems, which would not have been the case if small tarred cord had been used. During that time not a stem has been touched, though those unprotected were well bitten and peeled. A bundle of straw would protect many young trees, and when neatly done there is nothing unsightly in the appearance. It would be easy to dash the straw, but it seemed perfectly effectual for the allotted purpose when used alone.

The bedding *Pelargonium*, &c., in pieces of turf are doing so well that we have a lot of turf ready to be cut to pieces and filled the first wet and stormy day, and we have prepared a bed for them. Potted-off lots of Mrs. Pollock and similar *Pelargoniums* for bedding, giving them at first a little bottom heat after fresh potting. As soon as we have a mild day we shall move *Camellias*, &c., whose blooming is nearly over, into a vinery at work, that they may make their growth and set their buds early, and thus come into bloom next winter early without any forcing. Most other shrubs, and even bulbs and herbaceous plants, will, to a certain extent, come into bloom early if their growth is perfected early.

Forcing gently into bloom, and making hotbeds for propagating, are now matters of importance. It is a good time now to put in cuttings of *Verbenas*, and to sow seeds of *Lobelia speciosa*, *Amaranthus*, and *Perilla*. Cuttings of *Lobelia*, &c., are generally more true than seedlings, but then the seedlings give less trouble. With a good hotbed strong *Lobelia* plants may yet be had from seed before the middle of May. Our *Calceolarias* in the pit in which they were struck are a perfect thicket, and we are a little afraid to move them at yet.

Among a great many plants needing potting, we must attend to

Gloxinias and *Caladiums*.—We grow fewer of the former than we used to do, as at all times, even when in bloom, after starting them, they do best in a close, moist, warm atmosphere. Like the *Achimenes*, they keep well in their pots all the winter, laid on their broadsides to avoid drip, beneath a stage where the temperature is from 45° to 50°, and as soon as they begin to move they should be shaken out of their pots, allowing all the soil to go away, and be potted in sandy loam three parts, and one part of peat and rotten cow dung. When potted firmly a little water may be given, just a little round the tuber, but the soil of the pot should be little watered until the earth is filled with roots. Extra watering at first is very prejudicial. Beginners, until used to it, had better use small pots at first, and repot when full of roots. Any place with the requisites above mentioned, will do where the temperature ranges from 55° to 65°. Such plants do remarkably well in a vinery until a drier atmosphere is wanted, as the Grapes colour and ripen. We have had them do very fairly in front of a greenhouse and conservatory, with the front lights kept shut and shaded; but even there they were not quite at home. The leaves delight in more closeness and moisture of atmosphere. Small bits of charcoal in the soil and drainage are much relished, and after the pots are full of roots, weak manure-waterings, especially of the cool kinds, as cow dung, will be much enjoyed.

Cladiums, though requiring as much, or rather more, heat when growing, are more accommodating as house or conservatory ornaments when the leaves reach perfection. In a moist plant stove they do tolerably well if planted out, resting themselves and growing on with but little of our superintendence. When grown in pots they do better for having a season of complete rest after the leaves fade and decay. The roots left in the pots, which is the best plan, can hardly be kept safe, even when the pots are laid on their broadsides, if the temperature is often below 50°. Any dryish place where this is secured will keep them safe after the soil is pretty dry. In such circumstances many will now be moving, and all may be repotted. However done, they do best in a hotbed, as one of leaves covered with tan. When we have plenty of room we pot them at once where they are to produce their fine foliage. As room at this

season is valuable, however, we often pot them into fresh compost, in smallish pots at first, and repot again and again as the roots come to the sides. The last plan is best for beginners, or when you must depend on a careless waterer. One great element of success is not to have the tubers just beginning growth surrounded with cloggy soil; the watering must be in proportion to the growth of the roots, and little or none given until they are at work. Hence the small pots are safest where the watering is not done with care and judgment. If the roots were not well ripened, or if kept too cold and damp, they will be apt to rot; and if there is a rotten or decayed spot it should be cleanly cut out, and scraped and filled up with charcoal dust and lime. If at all bad we would lay the tuber in a shady place, and repeat the dose before potting. We have even fastened a piece of oiled paper round such parts to keep the damp out until the scraped wound was canterised and healed. Such a sore on the side may thus be got over. If at the top whence the buds come it would be fatal, just as when the tuber of a *Dahlia* is frosted at the crown. If kept well, however, the *Cladiums* will generally turn out sound. Sandy loam two parts, old dried cow dung or leaf mould one part, and heath soil one part, with some nodules of charcoal, will grow them well if assisted when in the bed with manure-waterings. If the loam is rather inclined to be stiff, half a part of silver sand will be necessary. After final potting we often sprinkle some sand on the surface, to be washed down with the waterings. They rejoice after potting in a bottom heat of from 85° to 90°, and a top temperature of from 65° to 70°, with a rise from sunshine, but shaded then. Air in sunny days should be given early, however little, as the falling of condensed moisture on the leaves greatly injures them. In fact, syringing them with anything but the purest water injures their appearance.

Dahlias.—Placed a lot on the floor of the vinery to bring them on for cuttings and dividing the roots. By placing a good root in a hotbed in time any quantity of cuttings may be obtained, which with a point and a joint to cut to will strike freely in a hotbed. In taking away one or both the leaves at the base of the cutting be sure you leave the bud untouched. The more cuttings you take from a plant, the less likely will the last taken be to bloom extra freely, however well treated. If you merely divide a tuberous root, so as to leave a piece of tuber to each shoot, and pot these, and put them in a slight hotbed, or other warmish place, until rooted, the more likely will they be to bloom freely and early. If anxious to try experiments you will find many useless pieces of tuber after such cutting-up, and if you graft on these young shoots without tubers, and place them in a hotbed, the shoot will be rather stronger than if rooting without such help. We have tried this with different kinds of grafting, but perhaps side grafting and cleft or wedge grafting did best. Where there is much to do people must be content with making cuttings of such extra shoots.—R. F.

TRADE CATALOGUES RECEIVED.

William Paul, Paul's Nurseries, Waltham Cross, London, N. — *Catalogue of New Roses, Pelargoniums, Camellias, Azaleas, Hollyhocks, &c.*

John Salter & Son, Versailles Nursery, Hammersmith, London, W. — *Descriptive Catalogue of Chrysanthemums, Dahlias, Paeonies, &c.*

W. Rollisson & Sons, Tooting, London, S.W. — *Trade Catalogue of New and Choice Softwooded Plants.*

John Moree, The Nurseries, Dursley, Gloucestershire. — *Catalogue of Cuttings of Dahlias, Chrysanthemums, Pelargoniums, and Miscellaneous Stove and Greenhouse Plants.*

T. S. Ware, Hale Farm Nurseries, Tottenham, London, N. — *Catalogue of Perennials.*

W. Deans, 2, Canongate, Jedburgh, N.B. — *Catalogue of Forest and Ornamental Trees, Shrubs, Fruit Trees, &c.—Catalogue of Seeds, Implements, &c.*

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, South Frederick Street, Edinburgh. — *Descriptive Catalogue of Florists' Flowers, &c.*

J. A. Bruce & Co., Hamilton, Ontario. — *Catalogue of Agricultural, Garden, and Flower Seeds.*

COVENT GARDEN MARKET.—MARCH 24.

ARRIVALS of foreign produce have been more limited during the last few days owing to the boisterous weather which has prevailed. Forced vegetables are now in excess of the demand, and prices must recede unless a great improvement take place in the demand. Hothouse Grapes are becoming scarce, but the new ones are close at hand. Strawberries

are quite sufficient for all requirements at this particular season. There are some Tomatoes from Algiers.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples..... $\frac{1}{2}$ sieve	2	0	2	6	Melons.....each	2	0	5	0
Apricots.....doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Carrots..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	12	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries.....oz.	1	6	2	6
Grapes, Hothouse.....lb.	15	0	20	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	1	0	3	0
Beane, Kidney.....hul.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	3
Broccoli.....bundle	1	0	2	0	Onions.....bushel	8	0	10	0
Brus, Sprouts $\frac{1}{2}$ sieve	3	0	3	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	8	0	0	0
Carrots.....bunch	0	6	0	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Calary.....bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers.....each	0	9	2	0	Rhubarb.....bundle	0	6	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bundle	3	0	5	0	Turnips.....bunch	0	4	0	6

TO CORRESPONDENTS.

SIX RHODODENDRONS (*Saul*).—The six we named have all the qualities you mention.

WINDOW GARDENS (*J. Walker*).—If you enclose ten postage stamps with your direction, and order "Window Gardening for the Many," it will be sent you by post from this office.

CAMELLIA (*Juvenis*).—When a gardener speaks of a Camellia, he means the Camellia japonica. The whole genus are natives of China and Japan.

BUDDING ROSES ON MANETTI STOCKS (*A. B.*).—There was a wrong arrangement in the directions we gave last week. The words "late in the year" should have been inserted in the last line, and the sentence then would have been "Late in the year it is better that it should remain dormant."

COLLECTION OF ROSES (*W. W., Norwich*).—"I have looked over the list, it contains nearly all the good Roses. A few I do not know, and some I should not have recommended. You had better prune them, and add the following to your collection—viz.:—Marguerite de St. Amand, Madame Julie Daran, John Keynes, Madame Masson, Baron Gouella, Baronne de Maynard, Mdlle. Emile Boyau, Gloire de Vitry, Souvenir de Comte Cavour (not full but very handsome), Madame Alice Dureau, La France, Madame Rolland (blush), Duchesse de Caylus, Marichal Vaillant, Baronne Pelletan de Kinkelin, Charles Verdier (a grand Rose), Céline Forestier, and Marechal Niel. *Tea*—Sombreuil (a fine Rose in all respects), Souvenir d'Elisa, Rubens, Souvenir d'un Ami, Adam, and Elise Sauvage. I have reinstated Madame Masson, not a very good grower, as we cannot do without it. It looks like a tumbler of claret. Gloire de Chatillon is the same Rose.—W. F. RADCLIFFE."

TRANSPLANTING YEW, ARADOCARIA, AND WELLINGTONIA (*An Old Subscriber*).—The best time to move the above is as soon after the middle of September as the growths are complete, the earlier the better; the next best time is the end of March or beginning of April, or a short time before they commence active growth. The Umbrella Pine, or Scisodopsis, you may obtain of the principal nurserymen advertising in our columns, but we cannot recommend dealers.

FRUIT TREES UNFRUITFUL (*R.*).—From what you say we should attribute the unfruitful state of the trees to lack of vigour. You can do nothing now beyond surface-dressing the soil over their roots with the stable dung, freeing it as much as practicable of the straw, for a distance of 2 or 3 yards all round the stem. Put it on from $\frac{1}{2}$ to 2 inches thick, point it in with a fork, but not so deeply as to injure the roots, and then blacken the surface with soot. In autumn give another good top-dressing of manure, let it remain on the surface during the winter, and point it in in the spring.

CHANGING VINES (*A. Allan*).—We would prefer grafting or inarching the Vines, for then there would be a double chance. Grafting is best done before the sap moves. We have grafted frequently with the stock in leaf, and a scion at rest. Inarching is best done on the young wood, when it is of some substance. For two late Vines we would recommend the Calabrian Raisin and the Trebbiano. We quite approve of the proposed treatment of the Vine border, would not add much to the surface at once, and would have nothing to do with blood or garbage. If your blood manure is old, dry, and sweet, some of it would do no harm.

HYACINTHS AND TULIPS AFTER FLOWERING (*An Old Subscriber*).—The plants after flowering should be continued under glass either in a greenhouse or frame, where they can be protected from frost until the foliage turns yellow, and then water should be withheld, or they may be planted out of doors in the flower borders after being well hardened off, but the former is much the better plan. The bulbs may remain in the pots in which they have bloomed, with the soil quite dry, planting them out in autumn, for the bulbs are not worth growing in pots the second year, but are fine for borders.

REPORTING ORANGE TREES (*Idem*).—By all means report the plant now if it requires it, but the fruit you need not remove; leave it on, and it will fall in due course. It is rather curious and interesting to have a

plant with ripe fruit, flowers, and young fruit at one time; this, however, is common with the Orange.

STRAWBERRIES (*R. U. R.*).—Strawberries now taken up with good balls and potted, will, no doubt, give fruit if they have good crowns, and are furnished with trusses of bloom. Six-inch pots are the most suitable, but for plants of the large sorts, 7-inch pots are not too large. The price of the pots varies considerably in different parts, but they may be had at from 1s. 6d. to 2s. 6d. per cart, and of the sizes named you will have of the former twenty-four, and of the latter eighteen pots to the cart. Each plant might give you from six to twelve good plants, the runners being layered in small pots plunged in the ground, and the pots containing the parent plants should be plunged to the rim in coal ashes and be well supplied with water in dry weather. The price of Grapes is dependant on the quality. They are worth about 1s. 6d. per lb. at the time you name, but sometimes from their inferiority and over-supply they are not worth 6d.

GRAFTING WAX (*Idem*).—You may form a good grafting wax without sealing wax, but the receipt in the "Cottage Gardeners' Dictionary," is excellent, though a trifle dearer than 1 lb. Burgundy pitch, $\frac{1}{2}$ lb. common pitch, 2 ozs. beeswax, and $\frac{1}{2}$ oz. mutton fat, melted, and put on with a brush while warm.

SCALE ON CAMELLIAS (*Camellia*).—We are unable to account for the scale on the Camellia shoot, but we do not think its being near the diseased Peach tree had anything to do with it. The scale may be destroyed by dipping or sponging the plant with a solution of Clarke's compound, 3 ozs. to the gallon; or the plant may be syringed, laying it on its side, and turning it round, so as to thoroughly wet every part. Avoid making the soil wet with the solution, which should be used at a temperature of 120°. Gishurst compound, and Fowler's insecticide, are also good remedies.

THRIPS ON PELARGONIUMS (*Amateur*).—Some of the leaves sent were eaten up by thrips. You had better fumigate several times with tobacco, not very strong, and when the leaves are dry. Syringe at noon the following day, and smoke again in a day or two. If that do not suit, sponge with quassia water, or, better still, with weak glue water, just strong enough that you can feel it sticky between the fingers when cool.

PLANTING ASPARAGUS FOR FORCING (*A. Allan*).—The best way to have Asparagus planted out permanently for forcing is to have a bed in a brick pit from 4 to 6 feet wide, to be covered with sashes when forced, and to have hot-water pipes beneath the bed, and a small pipe round at the top. The next best plan, and one which is frequently adopted, is to have 4-foot beds, with sides of pigeon-holed brickwork, the intervals between the beds filled with fermenting material, and the bed covered with sashes, or with asphalt or wooden covers. In the latter case the heads should be cut, and set in damp moss for several days in a warm light place previous to use. The simplest plan is to have a trench round a bed in the open air, the sides kept up with slabs, and covered in any simple way. We have had Asparagus early by covering the shoots with pots. By the first mode, with good treatment, the plants may bear well every year for some years, the secret of success being obtaining early growth after cutting, and getting that growth ripened early. The usual mode, however, is to have at least two beds, and to force one early every alternate year, which keeps the roots longer in a vigorous condition. The taking-up plan is very simple and effective, but it is attended with a great loss of plants, which can only be excused on account of the better rotation of crops it encourages in the kitchen garden.

FLOWER GARDEN ARRANGEMENT (*Jack*).—There is nothing very striking in the plan, but if well planted it would look well, and be more likely to do so when designed by the parties to be pleased. We can hardly advise as to the planting, as we do not exactly comprehend your proposed plan, but the garden will be better balanced if Nos. 1 and 3 be planted alike as to their main features; 6 and 11 should also pair; 4 and 10 as you propose, and 5 and 9; and you may put purple Verbena in the centre of Mrs. Pollock, and if the latter is strong, you may plant with the two mixed, and have the blue edging. We would edge every bed, and that would enable you to work up your materials. For instance, purple Verbena would make a good edging to Cloth of Gold Pelargonium, and variegated Arabis would make a good ring in front of the Lobelia.

CONSERVATORY, &c., ARRANGEMENT (*X.*).—We think the range of houses will look very well, and there will be no difficulty, as you seem to intend to have a fireplace for each house. Theinery would be best if it had a pit along the centre. This might be heated with pipes if desirable, and would be very useful for propagating purposes. This pit might be covered with glass, so that you could have what heat you wanted in the pit, while by means of air you could keep theinery as cool as you might desire. If the conservatory is intended for pots we would have a narrow platform and walk all round, and a flat sparred table in the centre. We presume you mean to heat by hot water.

PLANTS FOR A GAS-LIGHTED CORRIDOR (*Countryman*).—You will do no good with any plants in your corridor in winter and spring, as long as it is lighted with gas in the usual way. You would improve it much by using argand burners, and then taking a pipe from each burner into the open air through the roof. In such a smoky place Pelargoniums, Fuchsias, Myrtles, &c., will do so well as any plants. But having managed the gas, the next point is to give a little air at the top, and but little by the front sashes, and cover the openings either with fine wire shades or with fine woollen netting, to break the current of air and keep soot out. But for the gas we would recommend Ferns and even the hardier stove plants, which, with a little shade, would need little air, and, therefore, there would be little soot. With the gas burning and no outlet at the apex of the roof, no plants will thrive.

BOILERS (*L. J. Fleming*).—There is no boiler we know of that will combine all the properties desired. With almost any boiler you can keep the heat (45°) you want in a greenhouse all night, but it must be, as you state, by having the house as warm as wanted by nine or ten o'clock at night, and then just allowing the heat to decline a little until, as you state, it will be about 45° in the morning; but that can only be done by retarded combustion during the night. That retarding is done by banking-up, and lessening draught by shutting the ashpit door and the use of a damper. There will thus be a loss of heat from the fuel, but then there is the advantage of the mild continuous heat wanted. Were you to put on a fire at nine o'clock at night, and allow that fire to burn briskly, you would have more direct heat from the fuel, but much more

of it would go up the chimney, and your boiler and pipes would be too hot for some hours at night, when, taking nature for our guide, they ought to be the coolest. We repeat, then, we know no mode by which a mild continuous heat may be kept up at night, except by slow combustion in the case of boilers and pipes, as when the fire is out, even though all the doors are shut, the pipes soon cool. This is one reason why for single small greenhouses, where only a mild heat is wanted, we would have an old-fashioned flue instead of a boiler and hot water. In such a case of mild heating there is less necessity for slow combustion, as the flue absorbs the heat and retains it longer. Thus a sharp fire burned out in a flue and all the furnace doors kept shut, would often answer as well as a more continuous slow-burning fire under a boiler. In answering your inquiry in the Journal, page 183, the word "cannon" boiler is used instead of "crown" boiler. We are glad your inquiries as to the crown boiler lead you to think with us, that of itself it would require a deal of fuel. Such a boiler would be useful chiefly when a flue was used from the same furnace. What you call a cockey boiler, is a modification of the cannon or retort boiler. Your addition of side lugs would be an improvement, but you can gain the same object by hanging the boiler as it were on the fire, so that the fire plays round all the outside before coming through the centre and finding its way to the chimney. The conical boilers you describe are also very good, are easily fed at the top, and are good for keeping in the fire by slow combustion. The conical tubular boilers are also very good, and so are the simple saddle-backs, and better still the terminal saddle-backs, and they are very simple, and the fire can be brought all round them and over them. After having tried almost all kinds of boiler, or seen them worked, the result of our observation is, that all the kinds you refer to are good if well managed, and that in every one of them there can be no continuous heat and no economy of fuel without slow combustion from regulated draught.

INSECT ON PEACH TREE (L. M. C.).—It is the red spider, *Acarus tellarius*. It is usually induced by the air of the house being too dry. The vapour of flowers of sulphur are fatal to this insect. As the tree is in a pot

cover it with a sheet, put boiling water into a hot-water plate, sprinkle flowers of sulphur on the plate, and place it under the sheet, and leave it for two or three hours. Repeat the process if an insect re-appears.

LADYBIRDS (F. G.).—Decidedly ladybirds do not injure, much less kill, any plants; and the forester who is destroying them is acting most erroneously, for be assured that they are feeding on the aphides which injure the Pinuses. The ladybirds we have seen very numerous this spring, even where there were seemingly no insects; but it is their breeding season, and where they are depositing their eggs there we always expect that aphides will occur, the ladybirds seeing their embryos.

SLUGS—ROYAL ASCOT VINE (J. Mackenzie, M.D.).—A galvanic ring, being a hoop of zinc with a copper wire round its upper margin, was advocated some years since as an enclosure impassable by slugs, but we never tested its efficacy, and a piece of horse-hair rope in place of the copper wire, we are told, is more effectual as a *chevaux de frise*, and more enduring. Heaps of fresh brewers' grains allure slugs from better things. The Royal Ascot Vine will ripen its Grapes well in the same temperatures that ripen those of the Black Hamburg.

TORTOISE IN GARDEN (Africanus).—We have known a tortoise live in a garden for many years, burying itself when winter arrived, but re-appearing in spring. It does not touch insects, being a vegetarian. Lettuces, Dandelion, and Sowthistle are its favourite foods.

PROTECTING PEAS (A. Rothkirch).—The "best" protections from birds for Peas just above ground are little arches of galvanised small-meshed wire netting.

BRINJAL (M. B.).—The fruit so called, and known to you by that name in Ceylon and to ourselves at Calcutta, is produced by one of the varieties of *Solanum melongena* var. *esculentum*, and the white-fruited variety of which is commonly known in England as the Egg plant.

NAMES OF PLANTS (E. F. L.).—One of the varieties of *Ageratum mexicanum*. (*Nemo, J. B., Nil desperandum*).—We cannot name plants from their leaves only. (*T. J. H.*)—A is *Acacia holosericea*; B is *A. dependens*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 23rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 17	29.672	29.456	40	25	41	43	S.E.	.00	Showery; densely overcast; clear and fine.
Thurs. 18	29.828	29.710	51	30	41	40	S.	.06	Fine, overcast; heavy showers; showery at night.
Fri.... 19	29.720	29.460	50	33	43	41	S.	.16	Overcast; showery; fine but very damp.
Sat.... 20	29.600	29.470	41	34	42	40	N.	.24	Boisterous, with rain; stormy, heavy rain; stormy.
Sun.... 21	29.874	29.675	43	38	42	41	N.E.	.12	Overcast, stormy; showery; boisterous, fine.
Mon.... 22	30.096	30.001	47	30	43	41	N.E.	.00	Fine, brisk wind; cloudy; clear and cold.
Tues.. 23	30.198	30.167	41	29	42	41	N.E.	.00	Overcast and cold; cloudy; clear and very fine.
Mean	29.855	29.706	44.71	31.29	42.00	40.57	—	0.58	

POULTRY, BEE, AND PIGEON CHRONICLE.

FEATHER-EATING FOWLS.

ALTHOUGH the subject of poultry may be as old as natural history, and although in the course of the last few years many may have taken it up, and, as they thought, exhausted it, and cast it aside, nevertheless there are things not yet cleared up and made plain. We know that among our readers and subscribers we have men of talent, even some of the *élite*, who direct, and who appear only when the masses get bewildered. Among our early contributors we could put our finger on one who has dissected with Sir E. Home, and who has been asked by men of eminence in the medical profession to communicate to them anything worthy of note that occurred in poultry experience. They knew the value of comparative anatomy. Keeping poultry has been for years one of the recreations of professional men. The physician, the barrister, the clergyman, leaving behind them the sterner duties of their professions, hasten to the place where they can unbend, where they can indulge in a common hobby with wife, sons, and daughters—Fowls, Turkeys, Geese, Ducks, Pigeons, and Rabbits, all denizens of our farmyards or of our villas. The idea of a villa implies rest and enjoyment, and we like to think of it. Is there any farmer in England so taken up with his hay crop as the barrister who has four acres of meadow? The anxiety about the weather, the consultations as to when the crop shall be cut, and, more serious still, who shall be invited to the haymaking. We knew a kindly, generous-hearted man, who mowed five acres. He estimated his crop at £15, and his expenses (he lived a convenient distance from London), including the entertainment of those invited by his wife, sons, and daughters to the haymaking, at £27. He used to say jocosely he wondered how farmers lived, and often propounded to his younger children (he had a quiverful), an arithmetical question: If a man having no rent to pay mows five acres and loses £12 by it, how does a man who mows three hundred get a living and pay rent? When a new contrivance for mowing appears, such a man will

buy it; he will try it fairly, and will publish his experience. Many of the greatest inventions and discoveries have been made by men who were not interested in the pursuit to which the invention was applied; but they were amateurs, or, perhaps, to use a familiar phrase, they dabbled in it for amusement. Their discoveries in many instances made the fortunes of those who were interested in them, and in some originated or gave life to callings and manufactures that have had their influence in augmenting the trade of the country.

We have many medical men and physiologists among our readers, and we have experienced men of every kind. We want advice. We have complaints from our readers that certain fowls eat each other's feathers. We have proof of it among our own. They are not birds entirely at liberty, but they have hours of liberty over several acres every day. The peccant breeds are Houdans and Spanish. The cocks' tails stand like oaks in a naked land. The lower extremities of the hens are denuded of feathers. We know it is for want of something they do it. The hens only do it. We have exhausted our store of food and medicine. We are at our wits' end. Will some one help us?

POULTRY AND THEIR MANAGEMENT.

A MEETING of the members of the Framlingham Farmers' Club, was held at the Crown Hotel, on March 1st, the subject for discussion being "Poultry and their Management," introduced by Mr. W. B. Jeffries, of Ipswich, a gentleman now well known as a most successful breeder of many kinds of poultry.

Mr. Jeffries said:—I look upon it as a scion that ought to be engrafted upon agricultural pursuits, and one that if fairly attached will give such a return that it will take longer to sever its connection than it has to bring about its union. I will, in as brief terms as possible, endeavour to obtain a few converts to the poultry fancy. Taking into consideration the disinterestedness of the farmer upon this subject, it can scarcely be wondered that it has made such slow progress; but of late considerable attention has been given to it, and vast improvements are now

visible. And why should not poultry be reared for the market with the same care as sheep, pigs, or oxen? it would pay as well as any. Formerly, a nobleman or gentleman would not have sold the game off his estate; now it is common, and no one would shrink from admitting that it is so. It would seem, then, that a certain time is required before these plain things can be received and admitted by the public. Let us hope this time is arrived for poultry, and that the increasing attention given to it will not be confined entirely to exhibitions, but extend to the less glorious but equally useful task of providing a delicious article of food, and a luxury which may be indulged in at all times without imputation of extravagance. Fowls left to themselves are fit for table in July or August; but with proper and careful management they may be ready for market in April, May, and June, when they command great prices; so let us, therefore, give it a fair share of our attention, for while we have been slumbering, or little better, France, Spain, Holland, Belgium, &c., have been gathering a rich harvest, for there are annually imported into Great Britain no less than 380,100,000 eggs, which, if taken upon a most favourable average, will give something like 21,210 tons, the value of which is more than a million of money. Then let us take the consumption of poultry in London alone at five million head per annum, which is quite within the bounds, it shows there is a great demand. Then surely there is ample room for greater enterprise in this particular branch of live stock, and sufficient stimulus to induce farmers or their families to give their mind to it, as it may be made a profitable undertaking.

If you look to the production of eggs alone, one cock of a strong robust breed may have twenty-four hens, but if you want eggs that will produce strong healthy chickens six hens will be sufficient for one cock. The farmer who has not the will to expend money on fancy varieties, will do well to keep to one breed of poultry, the choice of which to depend upon his requirements; keep pure breeds and as good as can be procured, if for exhibition, for if anything is worth doing at all, do the best you can by it. I have this season known chickens six months old sell at ten and fifteen guineas each; but as my object to-night is chiefly to expatiate on the production for the million, I may tell you the greatest weight of meat is produced by judicious crossing, and for the heaviest chickens at the smallest cost none equal the produce from Dorking hens and a two-year-old Light Brahma cock; but for quality of the meat, there is no fowl in my opinion equal to a cross between Dorking hens and a Game cock.

Many people imagine success in exhibiting poultry can only be accomplished at great expense, but this is wrong; the essentials after possession of the birds are knowledge and painstaking. If the exhibitor is determined to possess a prize pen, and breed from it, the chances are he must buy it, and possibly pay a good price. Further, he must be prepared to find that even first-class birds do not breed all first-prize chickens, and, however good the blood, neglect will neutralise it all. There is no royal road to success, the exhibitor must be content to learn by degrees. Nothing but practice, close observation, and, if I may use the word, "study," will lead to success. But as profitable poultry is required, I tell those who wish to make it so by means of exhibiting or for market, that all the pains they take are not too much for success. But one thing is wanting, the false pride that is above selling eggs or poultry must be conquered before the balance sheet of poultry kept for marketable purposes will show the desired results. The business must be looked after as carefully as any other pursuit which is expected to be remunerative. In support of the fact of its paying for a little extra care, let me ask any present the weight of the last pair of chickens they had killed, and if you do not know, have the next pair weighed and compare with the following, which I have met with during the last year at poultry exhibitions where I have acted as judge—viz., chickens twenty-two weeks old, 16 lbs. 14 ozs. the pair; twenty weeks old, 16 lbs. 9 ozs.; and many others of similar weight. These chickens were fed upon Dear's poultry food, which I have proved a powerful fattening agent, increasing the number of eggs laid, and hastening the period of laying. As a preventive of gapes and roup, which fowls are subject to on cold wet runs, it is unrivalled. If gentlemen who are in the habit of rearing Partridges and Pheasants try this meal, they will not like to be without it. I have given it several years' trial, and therefore speak from experience.

There may be some present anxious to make a trial of profitable poultry, and would like to determine upon a variety that they could occasionally obtain a few prizes with, and market the

inferior produce; to such I should recommend the Dorking, which should embrace the following characteristics, viz.:—Compactness, great depth and length of body, low on the legs, which should be white, with a slight pink hue between the scales, the comb, whether rose or single, to be perfect of its kind, and the fifth toe well developed, apart from the others. Weight must always be a great consideration in this breed, which are easily reared, have a full breast, quick at fattening, good layers, excellent sitters, attentive mothers, and last, but not least, the perfect birds fetch good prices at exhibitions. When once you have settled upon your stock, turn it to account; sit all the early eggs to get forward chickens; at twelve to twenty weeks old, select all those with the least visible objection as exhibition birds, and fatten them for market. This reminds me of a hint I would give as to killing and packing. The necks of poultry should be broken, the birds picked while warm, and the body placed in a proper position to stiffen. They should be packed in wicker baskets in rows on stiff wheat straw, and well covered with the same, so that it forms a layer between each row. There is often very much difference in the value of birds arriving at market simply on account of insufficient care in packing; every precaution should be taken that the skin is not broken or bruised.

I fear I shall be extending this subject to too great a length, so I will in as few words as possible now explain the management of chickens, which usually come out of the shell at the end of twenty-one days. Remove the addled eggs and empty shells, but leave the chickens in the nest for one whole day, feeding the hen liberally, and supplying her with water in a safety vessel. I have found the following simple plan answer admirably—any labourer can prepare it at a trifling cost:—Take a flower pot 7 inches high, commonly known as a 32 size, cut a wedge-shaped piece from the rim about 1 inch wide and 1½ inch deep, which can easily be done with an old saw, then fix tightly a cork in the hole of the pot and fill it with water, place thereon a common flower pan or saucer of about 1½ inch larger diameter than the rim of the pot, and reverse them quickly, which will give a clear water-course of 1½ inch round the saucer, thereby preventing the drowning of chicks, and the supply will be equal until the flower pot is empty. Give nothing to the chicks, they only require warmth during the first twenty-four hours of their lives. I have heard of giving young chickens a peppercorn or other stimulant, but it is a practice to be condemned. When they are twenty-four to thirty hours old, place the hen and chicks under a coop in a dry shed open to the south, upon a surface of dry sand or ashes, putting a safety vessel of water within reach through its bars. For the first fortnight feed alternately upon whole grits, rice boiled dry, bread crumbs, and meal sufficiently moistened to remain crumbly; after the first fortnight they may begin to have a little wheat or barley, and above all things let them have daily a fresh supply of green food, mowings of grass, cabbage, or lettuce leaves. The golden rule for chicken-rearing is, feed little and often—every two hours. Remember, no warmth is so beneficial as that endangered by generous but proper feeding, therefore feed the hen as you do the chickens, giving her scraps and crumbs of bread from your table, and in cold wet weather soak them in ale. Every day when the weather is favourable, after the chickens are ten days old, place the coop upon a lawn or piece of grass closely mown, if possible sloping to the south, removing to the shed every night and during rough weather. All nests should be on the ground.

The subject of profitable poultry has such a wide range that it appears difficult to end it without craving your indulgence for a few minutes to introduce the Ducks, Geese, Turkeys, and Guinea fowls, which latter pair up similar to Pigeons, therefore an equal number of each sex must be kept. To obtain a stock of them some eggs should be hatched in the yard where they are wished to remain. To buy full-grown birds is almost hopeless, for being so strongly attached to the place of their birth, if sold, they will soon find their way back to it. The Guinea hen is a good layer, the eggs are rich, but unfortunately it is fond of roving about and hiding its nest in long grass, hedgerows, or corn fields. They are most select in the choice of their society, rarely associating with other fowls. May is the best month for hatching Guinea fowls' eggs. Incubation requires twenty-eight to thirty days, they must be fed like other fowls, and should be used to stated times, as they return to the yard at those times almost as punctually as the hands of the clock go round, and if one of the feedings is towards evening they then roost at home. We sometimes hear of robberies being committed in poultry yards and pheasantries. Experience

proves that in large country places a few Guinea fowls perched on some tall adjacent tree (as is their wont) will give due warning of the presence of nightly depredators, by their peculiar cry, long before the dogs on the premises have been aware of their approach. For such reasons these birds may be advantageously kept as the best of night-guards to the poultry yard, and at the same time are themselves by no means deficient as to productiveness.

(To be continued.)

WATER FOR RABBITS.

WILL you tell me about what quantity of water I may give to Rabbits? Most people say, Give none, as it will certainly kill them; but the rule in my father's house has always been that no animal nor bird should be kept without water, and ever since we have kept them we have given them a little every day—about a saucerful—and they have never been at all the worse from it; indeed their excitement when they see the saucer is quite extraordinary. I am very anxious that they should have water always kept in their hutch, so that, like other living creatures, they may drink when they like, but I am afraid to give them so much without advice.—H. A. J.

[We shall be obliged by some Rabbit-keepers informing us of their experience on this subject. Wild Rabbits, of course, have an unlimited supply of water; and we know of tame Rabbits kept in large enclosures who have access to water at all times. We believe that a doe only eats her young ones when suffering from thirst.]

HONEY SEASON OF 1868 IN LINCOLNSHIRE.

WHEN the spring of 1868 arrived, it found me with seven stocks of pure Ligurians here at home. Two were in Stewarton boxes well stored with honey, and forward; the other five were in Woodbury hives, the greater part stocks made up from the bees, brood, and combs of condemned colonies belonging to my neighbours. These latter stocks, with the exception of one or two, were soon in good condition, owing to the early spring weather with which we were favoured.

We come to the 1st of May, on which day drones made their first appearance in my strongest stocks; the rest were not so forward on account of their having but few combs, and were therefore not expected to swarm so early as some did in the neighbourhood. On the day mentioned I placed supers on my two Stewartons and a Woodbury stock that had only seven frames of comb last September, and was at that time fed up to 14 lbs. nett weight. This stock, not showing such good-coloured bees as the others, although considered pure, was for that reason supered, leaving the remaining four stocks to swarm. Work commenced in the two Stewarton supers at once, and went on apace; work also commenced eventually in the supered Woodbury. To my surprise No. 2 (Stewarton), which was fast filling its super, threw off a swarm on the 22nd of May. The super was finished, every comb sealed and taken off on the 27th, and another placed on, but the honey season coming to an end as early as the 12th of June, only 6 lbs. were stored in the latter. The other supers were finished to perfection early in June, their nett weights being 48 and 34 lbs. The first swarm after filling a Woodbury hive stored about 4 lbs. in a super. My total super honey amounted to 138 lbs. The queen of the above first swarm led off a virgin swarm and took to the woods, leaving a queen which turned out a breeder of mixed-coloured bees. I had four other natural swarms from the remaining stocks before the 11th of June.

It will be seen that I left them to their natural ways; for certain reasons I made no attempt at artificial swarms until July, when I made two, both of which have done well and are showing pure bees. Most of the young queens in the hives that swarmed naturally are breeders of mixed bees.

My stocks, with the exception of one, have lived through the winter (if it may be so called), but the consumption of stores in stocks not over-rich in provisions has been large. Pollen-gathering commenced on the 31st of January, and has been carried on at intervals up to the present time (early in March). So early a gathering of pollen I never before witnessed. Bees as a rule round here swarmed very little last season. I know of an instance where over one hundred stocks of black bees were kept in one village, and they had only three or four swarms. These results speak well for the Ligurians.—J. B., *Bracken Hill, Brigg.*

OUR LETTER BOX.

FOWLS LAYING SOFT EGGS (F. K.).—We believe rape seed to be injurious, inasmuch as its properties are fattening and softening. It is on a par with canary seed, and that would have the effect you complain of.

HENS SITTING WHERE NOT WANTED (C. R.).—You need have no trouble with your hens if you manage properly. Choose the place you intend them to sit in, and having done so, shut them in on their eggs. You are always running a risk when you allow them to sit where they please. If you are in doubt how to manage, we advise you to buy some butter tubs and have them sawn in half, knock the bottoms out, and let each half stand on the ground, put in a little straw, on it put the eggs, then put in the hen. Having done so, put some covering that shall admit air but confine the hen; basket, wire, or trelliswork will answer. Put the hen on eggs at night, and she will be content in the morning. Hens should not be allowed to sit in the place where others lay. We do not know what "Dandies" are when the word is used in a gallinaceous sense. We expect it is only another name given to birds that are already called Bakes, Dumpies, Creepies. These birds seem to have a right to all names that end in "ies." They are said to be excellent sitters and mothers. They are little kept. The best authority about them is the "oldest inhabitant," and when such persons are consulted they generally prelude their opinion by saying "They recollect their grandmother used to say she could remember."

BRAHMAS NOT LAYING (Ivanhoe).—The beak of the cock has nothing about it that is even disadvantageous. The tail feathers are correct. You have, perhaps, looked askew at the mixture of white; that is inseparable from age. There is more or less of alteration in colour after every moult, and with fowls, as with ourselves, the tendency is to grow lighter. Your fowls must be too fat. They have every appearance of health and laying, yet there is no produce; this is contrary to nature, and cannot be right. Fowls that are not worn out by age or useless from disease must lay. The vermilion combs and healthy appearance will not last long unless they lay. They are sufficiently fat internally to cause obstruction of the egg-passages. If that obstruction become inflammation the birds will die. Diminish the food one-half, let it be of a cooling kind, and provide green meat and fresh earth.

BANTAM COCKEREL (W. A.).—You do not name the breed of the Bantam. If he were sold to you for a Black Red, he had been "plucked" when you had him. If no particular breed were mentioned, he is quite as valuable as a Brown Red as he would have been as a Black Red. The brown feathers would not come naturally, nor would any, except to replace others that had been picked out by accident or design. It is impossible to give an opinion without knowing the exact terms of the purchase and sale. If the bird was sold for Black Red, it was represented to be that which it was not.

VULTURE-HOODED (W. H.).—The vulture hock is not at all connected with the feathering of the shanks and toes; this feathering is only permissible, but characteristic of the Brahma Pootra. The vulture hock is a term applied when the thigh-feathers project much beyond the knee-joint, as they do in the Vulture.

POULTRY IN CONFINED SPACE (Phillis).—You may keep six Brahma Pootra hens and a cock in the space you name. We do not think fowls will eat chickweed, it will not harm them if they do eat it.

NEW VARIETIES OF PIGEONS (Col.).—The Pigeons you name are, we believe, some of the countless varieties of German Toys. The German fanciers breed a pair alike in colour, and then send them out with a pretty name. We saw such a pair recently, and after three weeks white feathers came among the black, and *vice versa*. Evidently the person who sold them understood the process of weeding. At the same time, although to be bought cautiously, still these pretty feathered birds are very attractive at shows.

RABBIT MANAGEMENT (Novice).—Rabbits are subject to many hereditary diseases, but more are caused by injudicious feeding. Some declare for green meat, others avoid it entirely; experienced people will gravely tell you they will die if they are allowed to drink. Dry food only will induce lung disease, green food only kills in another way. Rabbits that had been warmly kept, if exposed suddenly to a great degree of cold, would suffer; but if well fed they would not die. We would not overfeed anything; but it is better and more profitable to keep one thing properly than two indifferently. Your food should be bran, oats, green meat, and water. You will then have only inevitable disease. Put the Grey to a Black.

BEES IN WARM CONSERVATORY (A Shropshire Bee-keeper).—"I am afraid I must appeal to others among the apian contributors to 'our Journal' for information upon this point, never having myself tried the experiment of wintering bees in a conservatory, although I should not hesitate to do so if I had the opportunity.—A DEVONSHIRE BEE-KEEPER."

SUPERING (A Bee-mistress).—We do not think super at all likely to be required at present. We shall be glad to receive an account of your adventures, disappointments, and successes in bee-keeping.

GOLDFINCHES (Mrs. C.).—Since recommending where to purchase Goldfinches fit for breeding with, I may now further state that I had an exceedingly fine pair of Goldfinches for Mule-breeding from Mr. E. Hutton, of Pudsey, Leeds, who has several other fine Goldfinches (two-year-olds and chevrels) for disposal.—G. J. BARNESBY, *Derby.*

POULTRY MARKET.—MARCH 24.

A DIMINISHING supply, but still the same absence of demand. The west-end season trade is becoming a thing of the past. There will be a scarcity of good poultry till the spring goods are fit for market.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	3	6	4	0	Guinea Fowls.....	2	6	3	0
Smaller do.....	3	0	3	6	Partridges.....	0	0	0	0
Chickens.....	2	6	3	0	Hares.....	0	0	0	0
Goslings.....	7	6	8	0	Rabbits.....	1	4	1	5
Ducklings.....	3	6	4	0	Wild do.....	0	9	0	10
Pigeons.....	0	10	1	0	Grouse.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 1—7, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	Days.	m.	a.	
1	Th	Meeting of Linnean Society, 8 P.M.	54.9	34.4	44.7	21	38	af 5	31	af 6	morn.	26	af 8	91
2	F	Cambridge Easter Term begins.	57.9	36.0	46.9	21	36	5	33	6	21	af 0	9 9	92
3	S	Royal Horticultural Society, Promenade.	57.0	35.3	46.4	20	34	5	35	6	23	1	56	93
4	SUN	1 SUNDAY AFTER EASTER.	56.6	36.0	46.3	17	31	5	37	6	15	2	50	94
5	M	Meeting of Entomological Society.	54.3	33.7	46.5	21	29	5	38	6	57	2	47	95
6	Tu	Royal Horticultural Society, Fruit, Floral,	57.2	37.9	47.1	14	27	5	40	6	32	3	after.	96
7	W	[and General Meeting]	57.3	35.8	47.1	20	24	5	41	6	2	4	51	97

From observations taken near London during the last forty-two years, the average day temperature of the week is 56.5°; and its night temperature 33.1°. The greatest heat was 79°, on the 7th, 1859; and the lowest cold 16°, on the 1st, 1838. The greatest fall of rain was 1.19 inch.

COOL-HOUSE ORCHIDS.

SINCE the article "Orchids in Tubs," by your able contributor Mr. Wills, appeared in THE JOURNAL OF HORTICULTURE, I have received several communications requesting me to detail my simple mode of culture. I am only too glad to do so, as it may possibly be the means of encouraging those who in humble circumstances like myself have hitherto been deterred from attempting to grow this beautiful and interesting tribe of plants in consequence of the supposed difficulty and expense attending their cultivation. I hope ere long to see Orchids as generally grown as Pelargoniums, for they undoubtedly require less care and attention than are generally bestowed on the majority of our stove and greenhouse plants; and when it is known that they may be grown in an ordinary vinery, I cannot but think that those who are lovers of Orchids, and have a house of this description, will take the advice of Mr. Wills, and commence at once.

As the growing of Orchids in tubs appears to be a novelty to some readers of the Journal, it may be interesting to state that tubs were first suggested by my employer, Mr. Joy, in consequence of some of our largest specimens becoming too crowded in 18-inch pots. He accordingly had two tubs, of the dimensions stated by Mr. Wills, made from petroleum casks, and the cost of each complete was less than 3s. Being so pleased with their appearance, and the Orchids succeeding so well, we have now eleven of them in use. I have tried them for Ferns, and for such sorts as *Hypolepis distans*, *Davallia bullata*, *Pteris scarberula*, &c., they are most suitable, besides being cheaper, lighter, and more easily removed than pots, and less liable to breakage. For exhibition purposes they are invaluable.

I have tried Orchids on blocks, but they do not succeed well, in consequence, I believe, of the dry atmosphere they are subjected to when the Grapes are ripening. *Stanhopea tigrina*, *S. insignis*, *Dendrobium Devonianum*, and *D. chrysanthum* I grow in baskets suspended from the roof.

The compost I use, and in which they succeed well, consists of equal quantities of sphagnum and cocoa-nut fibre refuse, with a liberal mixture of broken pots and charcoal. *Phajus*, *Calanthes*, and *Cypripediums* are benefited by the addition of a little peat and cow dung. Cocoa-nut fibre refuse is the best material I have yet met with for mixing with composts for growing all kinds of plants, and should be more extensively used.

I generally repot the Orchids just before they commence to grow, which, with most of the kinds I have, is in December, as the Vines are started in the first week in January. I remove as much of the old compost as it is possible to do without injury to the roots, fill the pots or tubs nearly half-full of broken pots or charcoal, and put over this drainage a layer of cocoa-nut fibre to prevent it from becoming choked up. This material lasts much longer than sphagnum. I then fill up with the compost,

raising the Orchids 2 or 3 inches, and if large specimens, 6 inches, above the rim, and water sparingly until they have begun to grow freely, and are making fresh roots. When they are at rest they only require water to prevent their bulbs from shrivelling. Whilst in flower they should be removed to the greenhouse, and be liberally supplied with water. The flowers must be kept dry, as they are apt to spot. Good drainage and careful watering are the great secrets of success.

The following is a list of the Orchids grown here, and which succeed well under the above treatment. I have several others not mentioned in the list, but I have not had sufficient experience to recommend them as Orchids for cool temperatures;—

Atrides odoratum
Warneri
Calanthe veratrifolia
vestita lutea
Cattleya crispa
crispa superba
elegans
Harrisonæ violacea
intermedia
Skinneri
Mossiae
Ceologyne cristata
Cymbidium aloifolium
sinense
Cypripedium insigne
barbatum
barbatum nigrum
venustum
Dendrobium densiflorum
chrysanthum
moniliforme
nobile
speciosum
Wallichii

Eria rosea
Gongora atropurpurea
Lælia anceps
purpurata
Lycaste aromatica
Skinneri
Maxillaria Harrisonii
tenuifolia
Miltonia candida
Clowesii
spectabilis
Oncidium divaricatum
flexuosum
flexuosum majus
sphaecelatum
Odontoglossum citreosum
Inseleyi
grande
Phajus grandifolius
Wallichii
Stanhopea insignis
tigrina
Trichopilia tortilis
Zygopetalum Mackayii

—LAWMAN TEMPLE, Gardener, W. G. Joy, Esq., Monfield House, Healdingley, Leeds.

SUBTROPICAL PLANTS.

(Continued from page 188.)

3. PERENNIAL AND HALF-HARDY.

**MELIANTHUS MAJOR*.—Foliage cut or divided, glaucous, handsome. The seed should be sown in brisk heat in April, in a compost of two-thirds fibrous loam and one-third sandy peat, with a free admixture of sand. When the seedlings are large enough to handle, pot them off singly, continue them in the hotbed, and when well established harden them off, and remove them to the greenhouse, potting as required. Keep them dry during the winter, but not so much so as to cause the foliage to flag. In March encourage them with an increase of heat and moist atmosphere, and repot them, and again in May, planting out early in June, after hardening them well off. This is a handsome plant for the centre of a bed or group. Take up

at the end of September, and winter in a greenhouse. Height 3 to 5 feet.

PHORMIUM TENAX.—Foliage long, Iris-like. Height 4 to 6 feet. This forms a fine group. It requires a plentiful supply of water, and may be wintered in a cold pit, protected from frost. Sow in heat, pot-off the seedlings when large enough, and forward them in a pit or cool greenhouse. Plant out in May, and take up in October.

***POLYMNIA GRANDIS.**—Foliage handsomely cut. The plant is of rapid growth, and well adapted for groups or masses. Height from 6 to 8 feet.

SOLANUM BETACEUM.—Foliage bright green, veined with purple; fine; 5 to 6 feet. *S. giganteum*, leaves large; flowers purple, followed by scarlet fruit; 6 feet. *S. marginatum*, foliage silvery, margined with white; 4 feet. *S. laciniatum*, leaves green, finely cut or divided; 4 to 5 feet. *S. macrocarpum*, leaves large; flowers dark blue; 5 to 6 feet. *S. pyracanthum*, leaves covered with orange prickles; flowers purple; 4 feet. *S. robustum*, leaves large and bronzed, with yellow spines; 4 feet.

The above are fine for beds or groups. The seed should be sown early in April, in light rich loam two parts, and one part leaf mould, and placed in a hotbed. Pot-off the young plants when large enough to handle, and when established remove them to a light and airy position in the greenhouse, repotting as often as the pots become full of roots. Keep the plants rather dry during the winter, and encourage them in spring so as to have them strong and well hardened-off for planting out early in June. Rich light soil should be used, and a plentiful supply of water given in dry weather. Take up the plants before frost, pot, and winter them in a greenhouse, keeping dry, and in February prune-in and place in heat, repotting after they have started afresh, and give a moist heat, so as to secure good growth before planting-out.

VERBESINA VERBASCIFOLIA.—Large leaves in profusion, produced fresh and vigorously late in autumn. 3 to 4 feet.

***WIGANDIA CARACASANA.**—Leaves large, and very fine for groups or masses. Of free robust growth. 3 to 4 feet.

W. URENS and **W. VIGIERI** are very closely allied to the preceding in style and manner of growth, but are of less vigorous habit.

4. PERENNIAL AND HARDY.

ARTEMISIA JUDAICA.—Foliage much divided, in colour resembling that of a *Centaurea*, but not so silvery. The plant is of graceful, compact habit, and attains a height of from 3 to 4 feet. Sow the seeds in light sandy soil, place in a mild hotbed, and prick-off the seedlings when large enough. Continue them in the hotbed until established, then harden them off, plant-out in the open ground in light soil, and remove to the beds in the spring of the following year. It is pretty for the centres of beds, for groups, and for lines in ribbon-border arrangements.

ARUNDO CONSPICUA.—In growth and inflorescences very like the *Pampas Grass*, but it flowers six weeks earlier. It is desirable for specimens on lawns. Sow in turfy loam and leaf mould, in April, in a mild hotbed. Pot-off the young plants singly when large enough to handle, keep them in a frame until established, then harden them off, and pot as required, wintering them in a cold frame, with the pots plunged to the rim in coal ashes, or in a warm sheltered situation out of doors. Plant-out in April, in good rich soil, where required. Height from 6 to 8 feet.

CERASTIUM BIEBERSTEINI and **C. TOMENTOSUM**, both well-known silvery-leaved plants. Sow in sandy soil in March, place in a hotbed, prick off the seedlings about 1 inch apart in pans, and when established remove them to a cold frame. Harden-off, and plant-out in May, at from 6 to 9 inches apart, where required for edgings, or lines in beds or borders. The seed may be sown out of doors in April, in sandy soil, and the plants pricked off, and planted-out in autumn or spring. Of the two *C. Biebersteini* has the larger and more silvery foliage, but *C. tomentosum* is of closer habit.

CINERARIA MARITIMA.—Foliage silvery, little inferior to that of the *Centaurea*, and well known. Very desirable for beds or borders, and admitting of a variety of adaptations. Sow in light soil in March, place in a hotbed of 70°, prick-off the seedlings in pans or shallow boxes, continue them in heat until May, then harden-off and plant out at the end of the month. Height 2 feet.

ELYNUS ARENAREUS.—Large ornamental Grass. 4 feet.

GYNERIUM ARGENTEUM (*Pampas Grass*).—Well known. Fine for specimens on lawns, centres of groups, or in borders.

Height 6 to 8 feet or more. This and the preceding may be raised as described for *Aruno conspicua*.

FERULA COMMUNIS.—This, the Giant Fennel, on account of its finely-cut or divided foliage, and stately growth, is very ornamental and effective for specimens in borders, or as a mass. 8 feet.

FERULA GIGANTEA.—Superior to the above in stateliness of growth, and hardness. Height 11 to 12 feet. Sow in a warm apout out of doors in sandy soil in May, watering in dry weather, and pricking-out the young plants about 6 inches by a foot apart, shading for a few days until established. In autumn protect with a covering or mulching of 3 inches thick of leaf mould or short litter. Plant-out in March or April. Rich, light, deep soil is most suitable, but except in warm situations the plant is not hardy in heavy soil. In exposed situations it does not prosper. The plant is herbaceous, and should be covered in autumn with a top-dressing of leaf mould or littery manure, placing it over the crown, and for some distance around.

HERACLEUM GIGANTEUM.—Large cut foliage, of tall, stately growth. The plant is not suitable for flower gardens, but remarkably fine for shrubbery borders and in woodland scenery, also for margins of lakes and on islands, but not where water remains stagnant. Sow in the open ground in April or May, in good rich soil, and not very thickly; when large enough prick off the young plants about 6 inches apart, shading for a time, and keeping them watered until established, and plant-out in spring. The seed may be sown at once where the plants are to remain, digging the ground deeply before sowing. Two, three, or more plants, may be grouped together, and they have then a better appearance. Height 8 feet.

PYRETHRUM GOLDEN FEATHER.—Foliage yellow, habit dwarf and compact, altogether a fine plant for beds or lines in borders. Height 1 foot. Sow in sandy loam and leaf mould, place in a gentle heat, and when large enough prick-off about an inch apart in pans, and continue in heat, keeping the plants near the glass, and admitting air freely. Harden them off, and plant-out in May, for which purpose the seed should be sown early in March. It may be sown during summer, but not after August, in a warm, sheltered situation, or in a cold frame; the plants should then be pricked-off in sandy soil in a warm situation, and planted-out in spring.

RHEUM EMODI.—Simply a large-leaved *Rhubarb*, and not despicable for borders. 2 feet. Sow in a pan placed in a frame, and when the seedlings have attained some size harden them off, prick them out in good rich soil out of doors, and plant out early in spring.

RUBRECKIA NEUMANNI.—Foliage very like that of a *Sunflower*; flowers yellow. The foliage is showy, but the plant is only suitable for borders. 3 feet.

RUBRECKIA SPECIOSA.—Foliage showy, and the flowers particularly so, being bright yellow, with a black disc. 3 feet. Sow in light rich soil in April or May, and prick-off when large enough, planting-out in the spring of the following year.

***SALVIA ARGENTEA.**—Foliage large and silvery; fine for beds or borders. 2 feet.

***S. CHIONANTHA.**—Leaves lanceolate, glaucous, and woolly; flowers white. A fine sort for beds or borders. 2 feet.

The preceding two are very desirable plants, and adapted for centres or other arrangements in beds, and for lines in borders. Sow in sandy soil in March, place in a hotbed, prick or pot-off the young plants singly when large enough to handle, grow them in heat, harden them off in May, and plant out in the beginning of June. Except in sandy, well-drained soil, the plants are scarcely hardy, and they should, therefore, be taken up in October, potted, and wintered in a cool, light, airy part of the greenhouse, increasing them by cuttings of the young firm shoots in spring, as with *Cineraria maritima*. Light sandy soil, enriched with leaf mould, is most suitable.

***SYLBIUM EBURNEUM.**—Leaves of a dark glossy green, with white midribs, spiny, and blotched with white. 3 feet. Distinct and fine; adapted for groups, or the centres of beds, and for borders. Sow in gentle heat in March or April, and treat as for *Rheum Emodi*. It should have a sheltered situation, and a rich but well-drained soil.

***CRAMEE CORNIFOLIA.**—Leaves large and fine; indeed, it is one of the finest of herbaceous plants, and quite hardy. 1½ to 2 feet. Sow not very thickly in light soil in March or April, and plant-out in spring. Fine for beds or borders.

STACHYS LANATA.—Foliage white and woolly; fine for planting in shade, or under trees, where a close carpet is required, and desirable for edgings to beds, or lines in borders. 1 foot.

Sow in sandy soil in April, prick-off when large enough 3 inches apart every way, and plant-out in spring.

**ACANTHUS LATIFOLIUS*.—Leaves bold and fine, dark shining green, remaining fresh throughout the season. 2 feet.

A. mollis, closely resembling the above, is also fine. 2 feet.

These two kinds of *Acanthus* are ornamental in groups and borders. Sow in loam and leaf mould, and place in a gentle heat. Pot-off the young plants singly when large enough to handle, keep them in a frame until established, then harden them off, winter in a cold pit, and plant out in spring, in good rich soil.

I have omitted in its proper place *VARIEGATED BORECOLE*, which certainly has beautifully variegated foliage of various shades of colour. Sow the seeds early in April, prick-out the young plants when large enough, and plant them out in rich soil, from 1 foot to 15 inches apart, in the reserve garden. In autumn, after the beds and borders are cleared of their summer occupants, plant them in the flower garden, for their beauty is for autumn, winter, and early spring; or they may be planted where they are to remain in June or July, and those so treated certainly make the best plants. If planting is delayed until autumn, the plants should be taken up with good balls of earth, and if the weather is dry, watered at planting and afterwards. The proper place for these plants, in my opinion, is the kitchen garden.—G. ABBEY.

FLOWERS OF THE PAST SEASON.—No. 3.

CHRYSANTHEMUMS.

I PAID my annual visit to Messrs. Salter & Son's well-known establishment in November, and I intended to have given some notes of what I saw, but some one had anticipated me, and I did not think it well to add a second account; but as it is now the best time for making selections of new kinds to add to collections already in growth, I give here my opinion of the novelties of last year as grown by myself or seen at Messrs. Salter's. As now the Japanese have formed a class of themselves we must perforce call the older kinds *Chinese*; and in accordance with the old rule, *seniores priores*, I will give the latter the first place.

CHINESE VARIETIES.

Baron Beust.—A fine incurved flower of chestnut colour, with yellow tips on the under surface.

Captivation.—A very beautiful flower; delicate cream colour, deeply bordered with carmine. It is not so much an exhibition flower as a beautiful conservatory plant.

Guernsey Nugget.—Clear primrose yellow; very full, large, and fine habit. It is a variety of first-rate character.

Lady Godiva.—Light rosy, fawn, bronzed and double.

Lord Derby.—Dark purple; florets very broad, and flower incurved and globular. A splendid variety.

Miss Marechaux.—Pure white; well incurved, and very globular.

Mrs. Hufington.—A gem; medium-sized, in the style of *Aimée Ferrière*, but more deeply marked. Good habit.

Princess Beatrice.—Rosy lilac; double, and finely incurved. A fine exhibition flower.

Princess of Teck.—Pure white; very large, and finely incurved. Fine form, and dwarf habit.

Staffa.—A very neat-looking flower; golden yellow.

Volunteer.—Purplish violet, closely incurved.

These are all good; but *Captivation*, *Mrs. Hufington*, *Lord Derby*, *Princess Beatrice*, and *Princess of Teck* I consider the best. In Pompons, which seem now very much in the background, there was nothing remarkable.

JAPANESE VARIETIES.

Aurantium.—Clear golden yellow; of large size and very double. It is very bright and bold-looking.

Leopard.—Indian red, with large yellow spots. A very curious and Orchid-like flower.

Nagasaki Violet.—Dark rosy violet, golden centre. Very curious.

Red Dragon.—Reddish chestnut, tipped with yellow, and sometimes spotted with yellow. The flowers are very double, and the florets tossed about in the most curious manner.

Robert Fortune.—Orange; large and full. A beautiful narrow-petaled flower.

Sulphureum.—Sulphur white, sometimes spotted rose. Flowers large and double.

Tarantula.—A curious spidery-looking flower, with long, narrow, single florets.

The Daimio.—Pale pink. Flowers very large and double.

Wizard.—A curious flower. Loose florets in the form of tassels; bright reddish maroon.

These are all worth growing, and together with some of those about to be sent out this spring, such as *James Salter*, *Dr. Maaters*, and *Hero of Magdala*, will form a collection which will be especially valuable for their late flowering, as they will prolong the *Chrysanthemum* bloom to the end of January, and although wanting regularity of form, compensate for that by their singularity of character.—D., *Deal*.

ALPINE ROSE—DIVERSE BLOOMING OF MALE AND FEMALE AUCUBAS.

YOUR correspondent "Y," in his interesting article headed "Alpine Roses," asks the question, "What, then, is the Alpine Rose?" and answers it by saying that it is what Latin-speaking editors call *Rhododendron ferrugineum* or *hirsutum*. Now, although these *Rhododendrons* are often called, both by guides and by travellers, "*Rose des Alpes*," yet they are generally, and ought always to be, accompanied by the prefix "*Rhododendron*" *Rose des Alpes*, to distinguish them from that very pretty flower, the *Rosa alpina* or *Alpine Rose*, to which the name properly belongs. The *Alpine Rose* is of a bushy habit, and belongs to that subdivision of *Roses* called "*Pimpinellifoliae*." The flower has five petals of a bright pink colour, and measures rather more than an inch across; the leaves are exceedingly small, not half an inch long; wood very slender and brown in colour. The plant is found in the *Vor Alp*, the *Vosges Alps*, and the *Jura*. In German the three *Alpine Rhododendrons*—*hirsutum*, *ferrugineum*, and *chamaecistus*—are respectively called *Gerfarnxter*, *Rostfarblättriger*, and *Drusiger Alpenblum*, not *Alpenrose*.

Does the same difference exist in England this winter that we have had here in the time of blooming of the male and the female *Aucubas*? This winter the variety *pygmaea viridis mascula* was in full bloom when the first hard frosts set in on the 21st January, and no females of any kind are in bloom yet.

The *A. maculata mascula*, one of the latest-blooming males, has begun to blow, and would be in full bloom in a day or two if the weather moderated a little. Some of the new introductions of females are far more forward than the old variegated kind. In England, where all the new varieties were introduced and cultivated long before they were here, has it been found by experience that the time of blooming has in any way altered since they first began to be cultivated in the open air? And is there any tendency towards an equalising of blooming time between males and females? I do not allude to any seedling hybrids or cross-breeds, but to the original bushes first put out.—F. PALMER, *Versailles*.

ORCHARD HOUSES.

IN the preface to the fourth edition of my little work on the "*Orchard House*," I remarked that orchard houses would be built in at least an equal ratio with the spread of the knowledge necessary to insure their success. This was written two years ago, and what is the result? The demand for fruit trees in pots was never so large as it has been this season. I hear this on all hands. I have not a single *Peach* or *Nectarine* tree fit for sale left in a pot, and have even sold some which had been marked to be kept for my own fruiting. This does not look as if orchard houses were not a success. The whole tendency of modern fruit-growing is towards glass culture. In this uncertain climate the comfort and pleasure of the gardener, the certainty, quality, and weight of the crop, can only be insured by glass; and I believe if a man goes to a great expense in trying to grow *Peaches* on open walls he will soon be thought fit for an asylum.—J. R. PEARSON, *Chilwell, Notts*.

ARUNDO CONSPICUA, OR TOY-TOY GRASS.

ALLOW me to call the attention of your readers and experimentalists to the New Zealand "*Toy-Toy Grass*," *Arundo conspicua*, believing it will prove a valuable plant to cultivate extensively in this country for cordage and strong hempen fabrics. Its fibre is nearly as strong as that of the New Zealand *Flax* (*Phormium tenax*), while it is much more prolific, and seems as if it would grow anywhere in this country and yield a heavy crop. The blades are very much stronger than our

Pampas Grass (*Gynerium argenteum*), of a darker green, rather broader and not quite so erect, from 2 to 4 feet in length. I enclose a blade for you to test its strength.—HENRY CURTIS, *Devon Rosery, Torquay*.

[The specimen sent measured nearly 3 feet in length, and one of its fibres, which are easily separated, required a powerful force to break it. The plant is now usually called *Calamagrostis conspicua*.—EWA.]

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT MANCHESTER.

We are rejoiced by seeing that our "Manchester—to the front" has prevailed. The Committee of Promotion consists of the Mayor of Manchester, Sir James Watts, Rev. Canon Gibson, Messrs. D. Reynolds Davies, Sam Mendel, T. Ashton, Edward Nathan, Edward Brooke, Thomas Agnew, jun., Charles Durham, H. K. Balstone, W. C. Bird, Horatio Micholls, W. C. Jones, J. Sichel, John Rylands, John Shaw, Matthew Brown, Bruce Findlay, and Mr. Henry Whitworth, 96, King Street, Manchester, is the Hon. Secretary. Such a Committee is a guarantee that the arrangements will be good.

The subscriptions are now as follow, yet much more ought to be done. Why do not Liverpool, Preston, Warrington, and other Lancashire towns offer special prizes as the towns in Suffolk did?

	£	s		£	s
Royal Horticultural Society...	25	0	Edward Brooke (a silver cup)	10	10
The Council of the Manchester Botanical and Horticultural Society	25	0	J. Sichel	10	0
Proprietors of the <i>Gardeners' Chronicle</i>	21	0	W. C. Jones	5	5
Proprietors of the <i>Journal of Horticulture</i>	21	0	John Rylands & Son	5	5
Sir James Watts, Bart.	10	10	Joseph Broome	5	5
			Thomas Agnew & Sons	5	5
			Charles Durham	5	5
			H. K. Balstone	5	5

COATING SEEDS WITH RED LEAD.

As the possibility of some of your readers being slowly poisoned is a matter of some consequence, I must ask leave to make a few remarks on your comment on my last communication. You say that red lead is "totally insoluble in water, or even in acids." This is only partially true, as red lead is decomposed by dilute nitric acid, forming insoluble biniodide and soluble nitrate of lead (Fowne's "Manual of Chemistry," page 336). Now, according to Dr. Medlock (Muspratt's "Dictionary of Chemistry," vol. ii., page 491), the injurious action of rain water upon lead cisterns, &c., is caused by the oxidation of the ammonia present in such water into nitric acid; and if this is the case, it is evident that the action of rain on the red lead in the soil would be to slowly decompose and partially dissolve it. It is also a question whether it would not be partially and gradually converted by the action of the carbonic acid of the atmosphere into carbonate of lead, which is slightly soluble in rain water.

An instance of the power of vegetables to absorb lead from the soil once came under my own observation. A quantity of waste barks from white-lead stacks was burnt, and a piece of ground in which Potatoes were grown manured with the ashes, containing about 10 per cent. of lead. The Potatoes were analysed by an experienced analytical chemist, and were found to contain very marked traces of lead. The lead in this case was probably not in a more soluble form than red lead.

In conclusion, I do not affirm positively that plants grown from seed covered with red lead will contain lead; I only say it is dangerous, and sincerely hope your valued contributor "R. F." will not eat his own vegetables till he find a more harmless way of protecting the seeds.—A. O. W.

[Excuse us for saying that your deductions are all erroneous. It is true that red oxide of lead is slowly, very slowly, decomposed by dilute nitric acid, but the acid must not be very diluted, and never could be formed in the soil of sufficient strength to dissolve the red lead. It is quite certain that the carbonic acid of the atmosphere will not convert the red oxide into a carbonate, and months elapse before even water highly charged

with carbonic acid has any such effect. The burnt bark you mention probably contained lead in the state of a carbonate, and that being soluble in water might be absorbed by the roots of the Potatoes, but the red lead applied to seeds remains on their skins, and the roots soon are away from it.

We are quite sure that neither "R. F." nor any of our readers will hesitate about eating vegetables raised from seed coated with red lead, and we are confirmed in that opinion by the following letter just received:—"I was not a little surprised to read 'A. O. W.'s' warning against coating seeds with red lead, as I have practised the same for some years with success against the heavy depredations of small birds. I have not experienced any evil effects from the use of it. I find that if the birds do pull up a few of the seedlings and find the seed not palatable they soon desist, and where I had formerly a scanty seed bed, now I have my full per-centage. I also aimilarly coat Broad Beans and Peas to prevent the attacks of mice, and find equally good results. I have opened some seeds to-day, and examined them, and cannot discern the slightest trace of colouring nor the taste of lead about them. Therefore your answer, I should say, is a very wise one, and one that will allay many doubts on the subject. I shall take a very marked notice of seeds sown with and without the application.—C. C."]

COBHAM HALL, KENT.

THE SEAT OF THE EARL OF DARNLEY.

It is unfortunate that some of the most remarkable mansions of our nobility are in positions which we at the present day regard as ill-chosen and bad, yet we ought not to pass too hastily a condemnation on these ancient dwellings, for there is no doubt that the builders had their reasons for so placing them. Shelter, contiguity to water, or seclusion and security at a time when lawless deeds were but too common, led many to prefer a low situation to an elevated one. These considerations, no doubt, justified the selection of sites we often regret, and some allowance must also be made for the prevailing ideas of the times. No doubt a future generation will find as just cause to condemn much that we now do, for nothing is more changeable and capricious than public taste, and in nothing has it differed more than in the building of a mansion, villa, or cottage. Cobham Hall is one of the best examples of the style of architecture prevailing at the close of the sixteenth century, being, perhaps, as good a specimen of a Tudor house as can be met with. The situation is low, the ground rising gently from it on all sides except the north-east. The structure is of red brick, presenting a frontage to the south little short of 300 feet long. This length of frontage necessarily involves a large extent of court within the body of the building, for the west end is of considerable width, one of the courts opening out in this direction. The carriage entrance is at the north side, which, however, presents less of architectural interest than the other sides, and on one of the door heads I observed the date, 1585, carved in the quaint figuring of that period. The most remarkable features in the building are the four octagon towers which flank the corners of the main body of the mansion; these towers, rising a proportionate height above the other buildings, which I may remark are not lofty, are each surmounted by a cupola, and give an imposing aspect to the whole. The offices are attached to the east and north-east of the house, and though many of them harmonise well with the main body of the mansion, some portions do not, being apparently from eighty to one hundred years old, and erected at a time when the art of building had much declined; nevertheless, as a whole, Cobham Hall in its architectural features is of considerable interest.

Immediately adjoining the offices, on the eastern side of the mansion, is that portion of the forcing department of the garden which contains the Pine pits, Strawberry houses, Melon and Cucumber houses, and other ranges of structures which form necessary appendages to a large establishment, and their position near the stables, where hot dung is obtained, as well as the firing that may be wanted, is certainly well chosen. The kitchen garden, which is surrounded by good walls, adjoins this forcing ground on the east side, consists of about three acres, and appears to be nearly square. The soil is an excellent one for vegetables and small fruits. Some useful slips bound the garden on the east and south sides, and a snug compartment about 150 feet square, to the south-west of the garden, contains the gardener's cottage and two good vineries, and the remainder is laid out in a series of flower beds of a simple but

effective pattern. The beds are bounded by Box edgings and gravel walks, the latter in no instance being less than 4 feet wide, so that the beds when planted and in their prime do not appear crowded, which unfortunately is the case in too many gardens. One of the vineries is furnished with a single Vine of the Black Hamburgh, covering an area of upwards of 800 superficial feet, and it could easily be made to cover three times that extent, as it had been cut away to a considerable extent to make some alterations. I was told that it invariably produces excellent crops of good fruit, and with more room it would be in a fair way to rival the celebrated Vine at Hampton Court. The border its roots were growing in was sealed up under a gravel walk, thus proving that, externally at least, the Vine's good condition was in no way owing to their present position; but, no doubt, its vigour was increased by judicious treatment. Some plants were grown in this and the adjoining vinery, but fruit was the main object.

Inside the kitchen garden were three other vineries of more recent construction, and excellent fruit in various stages of growth was coming forward. These houses were heated by one of Ormson's boilers, which are liked very much, and there was plenty of piping inside. The Pine Apples were mostly grown planted out in beds in pits, bottom heat being supplied to the beds by hot-water pipes covered over with rubble, and nothing could look finer than the Pine Apple plants. The kinds chiefly grown were Prickly and Smooth-leaved Cayenne, Jamaica, and Queen, with a few Trinidads, and one or two Envoles, but the first-named were the favourites. A Cucumber house had been in bearing a long time, and Strawberries, Dwarf Kidney Beans, Melons, &c., were here produced in great abundance. In the open garden the effects of the winter were visible in the thinning the squares of Broccoli had received, but all the spring crops seemed promising, and wall fruits good for the season. The extent of wall allows of a great number of trees being planted. One wall is devoted entirely to Morello Cherries, which looked remarkably well, entirely covering the wall from top to bottom. Strawberries were allowed more room than is generally given them, about 3 feet by 2, and by their robust appearance the space did not seem too much.

We now come to the most important part of the pleasure ground and flower garden, which lies on the north side of both kitchen garden and mansion. The ground in this direction rises to a considerable elevation, the lower portion being nearest the mansion and kitchen garden; in one place where it rises abruptly there is a fine bank of Roses, while in another a retaining wall is substituted, but above this slope is an important terrace, level for a considerable distance. The opening thus formed extends a long way east and west, its southern boundary being the back of the kitchen garden, which is concealed by a shrubby belt, while the Rose bank on the same side unites it with the mansion. Its northern boundary, I may add, united with some other shrubbery, partially dressed, still rising to the north. The space thus formed by the level terrace was partially occupied by a geometric set of flower beds, appropriate to such a site, and studded round with some fine examples of Pinus and other trees and shrubs, amongst others being the finest specimen of the Liquidambar that I have ever met with, while many other rare trees had good representatives. A Rose temple, planted many years before such things became common, was also in good condition, and the noble Oaks which overhung the northern boundary of this terrace garden, fronted as they were by an irregular line of shrubs almost as patriarchal as themselves, gave sites for summer houses of various kinds. A Grecian temple with its imposing facade stood prominently forward in one place, while more retiring, as it ought to be, was a rustic structure, and more secluded still one in imitation of a cave, the character of the ground and its surroundings affording suitable sites for all these and others without a too great proximity.

Communicating with the terrace garden are walks leading in various directions round the hill which bounds it to the north, as well as to the hill top. These beautiful walks, whilst occasionally leading among and beneath shrubs and trees, here and there open upon some beautiful landscape, whilst seats invite us to sit down and feast our eyes on the rich but quiet beauty of the view. The eye can discern in the distance tokens of the great naval dockyards of Chatham and its sister towns. On a favourable site of this kind a memorial in the shape of a summer house had been erected to the honour of the great landscape gardener, Repton, under whose direction the planting, or probably the thinning, of the trees on the adjoining heights had been done; and it had been carefully and artistically done

too, for I noticed a piece of woodland so treated, that while a fence secured it, yet the fence itself was carefully concealed by an irregular outline of trees standing singly outside. Continuing our walk and obtaining other peeps at near and distant scenery, we come to a spot facing the north, where another summer house of classic construction forms a feature, also seen from the distance, and commands an extensive view, which becomes still more extensive as we gain the top of the hill, where the ground is but sparingly planted, and that only with the choicest trees. Amongst others I noticed some fine specimens of Wellingtonia, which at the time of my visit promised to succeed well; other trees were also good, while adjoining as well as bordering many of the walks, were those highly ornamental shrubs which have given this place such a charm—the Rhododendrons, whose numbers at Cobham at a time when they were not to be had by the thousand, as they now are, will ever remain a memorial of the taste of the noble predecessors of its present owner, who so extensively planted them.

Having described the kitchen garden and ornamental ground to the north of the mansion, I will now glance at its other surroundings, and may say that the principal carriage approach is from the west, where it joins the park, and a short distance from the west front stands a patriarchal tree, on which there hangs an interesting legend, the particulars of which I cannot at present call to memory; other venerable trees judiciously interspersed sufficiently clothe the fine undulating park in this direction, until the eye rests on an extensive area of wooded upland, to which one of the carriage roads points, and to which I will presently allude. Before leaving the precincts of the mansion, however, the lawn immediately to the south of it must be mentioned. This is several acres in extent, partly level and partly rising at the southern extremity, where immense groups of Rhododendrons conceal its boundary, while nearer the mansion is a series of flower beds. Beyond this dressed ground on almost all sides is the extensive park stretching in every direction, many of its eminences being clothed with timber, while views of more distant scenery are obtained between. A very conspicuous object at the southern extremity of the park is the mausoleum, an imposing pile of Eastern design.

Leaving this and retracing our steps by one of the drives leading through the park to the north-west, we at length come to what appears in the distance a large tract of virgin forest, but a nearer approach reveals the fact that a very liberal addition indeed had been made to the occupants of this forest by one of the former proprietors of Cobham; for immediately on entering the gate we find the road lined on both sides with a mass of Rhododendrons of very large size, and as we advance we perceive the ground almost entirely covered with this shrub, which, seeding and sowing itself, is reproduced in as great abundance as Gorse or Furze is in other places. Besides the carriage road which traverses this extensive wood, other drives or walks intersect it in various directions, each being bordered by that never-ending line of Rhododendrons, which, as has been previously mentioned, are not confined to the edgings of the drives or walks, but extend through to the next walk or drive, the open space being no larger than is requisite to vary the scenery. The number of miles of such drives is, I believe, very great, and the acres over which these Rhododendrons extend have been roughly estimated at upwards of 100, and may be much more. The present noble proprietor of Cobham (the Earl of Darnley), has for many years been in the habit of kindly throwing this extensive tract of pleasure ground, as it may properly be called, open to the public on certain days, when the plants are in bloom, and the sight must be gorgeous. I believe the boon is gratefully acknowledged by the number who visit the place at that time, as the rising town of Gravesend is not far off, and London sightseers also find their way hither in great numbers. The fine clear air, with eminences from which extensive views can be obtained, give the place a charm which in spots nearer the seats of industry does not exist. The trees interfering with the views from these heights have been carefully removed, so that many parts of the Thames may be distinctly seen, and other objects of note as well.

It would be an omission in describing a place where the Rhododendrons seem so truly at home, not to state what is the soil that supports them. It is a dry peat resting on a brown-coloured stone, the trees which overhang them being in most cases scrubby Oaks of no great size, and Birch trees, the latter evidently being more at home, but neither presenting that robust health which the Rhododendrons do. In the open places were coming up myriads of Foxgloves, which of them-

selves present a mass of bloom of no mean character, after the Rhododendrons are over; but the open plots were few compared with the part covered, and as the timber trees were not more numerous than useful in the way of giving shade, the Rhododendrons may fairly be considered the principal objects whose growth is encouraged. Although, as regards the Rhododendrons, there is no lack of quantity, the requirements of the present age call for variety, so extensive plantations of the newer kinds have been made; and I noticed some large spots of half an acre or more, at a place where the former crops had been removed, and the land trenched ready for more choice varieties, which will prolong the blooming season as well as afford other colours. The principal thing, however, that strikes a stranger, is the immense number of large old plants which for miles present themselves, reminding the looker-on that a well-directed outlay at the time when these plants were scarce and costly has left an enduring mark on the place; and Cobham Hall is not likely to lose any of its fame in the hands of its present noble proprietor, for all is being done that can be done to maintain the character of plantations already existing, while new ones of chosen kinds are being extensively made, and the area devoted to them enlarged on all available sides.—A SUBSCRIBER.

EFFECTS OF LINSEED OIL ON VINES.

IN No. 404, page 486, of last year's volume, you reply to a correspondent recommending linseed oil for mealy bug on Vines. In consequence of that, I applied linseed oil to the whole of the Vines here, which are about five years old, and just in good bearing. Having the houses painted at the same time, I thus thought to have made a thorough clearance of the pest. There is no doubt the oil has made a clearance of the mealy bug, but, I am sorry to say, of the Vines also. I have had fire heat in one house for two months, and there is not a sign of a bud pushing—in fact, I have examined them, and find the buds are all dead. I do not think the Vines will break, except at the bottom of the rods where the oil has not touched the buds. Some are breaking there, and some are not. Advise me which would be the better to do—to cut back the old Vines, or plant young ones this spring.—P.

[It appears you have oiled the whole of the stems, and covered the eyes with the oil. No injury results from oiling the parts of the stem infested with the mealy bug, as we have repeatedly applied it to fruit trees infested with scale and American bug, and with success as regards the destruction of the insects, the trees not being in any case injured. Surely the oil was not "raw," or it was probably mixed with some other liquid, as spirits of turpentine. The appearance of the Vines in the late house sustains our opinion that it is the eyes or buds that are destroyed, as the wood seems green and fresh, which would not be the case had the oil destroyed it. We should allow the old Vines to remain, encouraging a young rod from each, such being in most cases produced from dormant eyes on the stems of young Vines as well as those of considerable age.]

EAST LOTHIAN STOCKS.

ALLOW me to suggest to your numerous readers a caution in depending upon these much-talked-of flowers. I took the most effectual means to secure the best seed from the highly-respectable parties who first praised them in your valuable Journal. The result is that from three packets of different coloured varieties I have about nine very inferior plants—the remaining flowers being single. As in this neighbourhood I have the honour of being celebrated for superior Stocks, I do not think the fault lies in my mode of cultivation.—G. B., JUN., *Elanely*.

WARNING.

I KNOW you are in no way responsible for the advertisers in your columns, but I cannot refrain from writing to you about the bad fortune I have had with them—fortunately only in a very small way. I have answered but few since the time I began subscribing to your Journal about a year ago, and in doing so I have been foolish enough to send the stamps beforehand, thinking it the shortest way, but I am now convinced a very bad way. I sent the stamps for some golden plovers some months ago, but never heard a word. I had to write a very sharp letter last spring before I could get cuttings I had paid for a fortnight before; and now I have sent stamps for some

Verbena cuttings, advertised by a London nurseryman, and though it is nearly three weeks ago, and I have written again, I have not heard about or received them. In future if even an advertiser "requests payment from an unknown correspondent," I shall take my chance of being attended to without sending the money, as it appears I have to stand the same chance, or a worse one, when I do. If you think I am the only one who is foolish enough to pay beforehand, you can take no notice of this. If you think there are others who do the same, you can give a rap in your answers to correspondents.—J. F. B., *York*.

[We have had other similar complaints, and one against a firm we know to be respectable. Such delays often occur in consequence of the demand exceeding the supply, and when it does so, in these penny-postage days, we think vendors should write to intending purchasers who have confided in them.—EDS.]

NEW BOOK.

Echoes in Plant and Flower Life. By LEO H. GRINDON, &c.
London: F. Pittman.

THIS little volume is entirely frothy; the hubbles of the froth are bright, but they are only hubbles. The entire book is devoted to telling that in regions wide apart there are plants having parts similar in form. These Mr. Grindon calls "Echoes." Why!—the flat nose of a black man on the coast of Africa, according to such a commentary, is the "Echo" of a white man's flat nose on the coast of Kent.

Mr. Grindon is an enthusiast, poetical and reverential—that is, he speaks lovingly of God and His creations. But what need of this contrast when speaking of flowers?—what justification for saying they afford "miracles as grand in their kind and in their influence upon our souls, when watched in a reverent spirit, as the miracles long ago wrought in a corner of Asia?" If this be not a sneer it much resembles one; and to compare the phenomena of plant life with the miracles recorded in the New Testament is simply absurd.

There is one, and but one, useful passage in the book, and it is the following mode of copying leaves and their veins:—

"The best and cheapest plan is not the original 'photogenic,' but that which has been named the 'chromotype' process. To practise this, sheets of white paper are first washed on one side with a solution of sulphate of copper, and when dry, with a solution of bichromate of potash. This gives the surface a pale yellow tint, to preserve which, and the sensitiveness, the prepared paper must be kept in the dark, say between the pages of a large book. When it is desired to obtain the image of a leaf with its veins, lay the leaf upon a piece of the prepared paper, keeping the prepared side uppermost, and place upon it a piece of plate-glass, so that the leaf may be perfectly flattened against the paper. The better to ensure perfect flattening, it is well that the leaf intended to be copied should be heavily pressed for half a day or so, in the way that would be done were it intended for the herbarium. Next expose the paper, with the leaf and glass upon it, to the sunshine, and in an hour or two the yellow tint will disappear, except where the leaf intervenes between the sun and the paper. This portion will of course remain yellow; and now, on the paper being dipped into a dish of solution of nitrate of silver, the outline of the leaf and every vein and veinlet improvises itself in vivid and permanent scarlet! So magical and instantaneous is the appearance of the scarlet, that it can be compared only to the sudden illumination of a dark parlour by kindling a taper and lighting the gas. After being dipped in the nitrate of silver, the pictures should be dried by being placed between sheets of blotting paper and well pressed; and to ensure their retaining their beauty, they should be preserved in some darkened receptacle. The best leaves to select for the chromotype pictures are those of very thin and dry texture, and level surface, such as the Beech. Leathery, juicy, and downy leaves are altogether unsuitable."

THE WALNUT TREE.

FOR many generations the Walnut has been a favourite tree with the schoolboy, who makes "a shy" at it with a stick on going to and returning from his place of daily penance. He looks with particular interest on this tree, as being one whose produce he is entitled to partake of in a sort of clandestine way, and rich is the treat when the fruit attains maturity. The oft-repeated injunction not to meddle with it, for fear of staining his hands, is then disregarded, and the hands have to complete that removal of the shell which the foot was unable to effect, as the tempting prize could not be left behind. Older people than schoolboys also cast a longing eye upon the produce of this tree, and now and then an onslaught is made upon it, and some one "gets into trouble."

The Walnut is also an interesting tree to the cabinet-maker, some of the choicest descriptions of furniture being made of its wood, while the gunstock-maker is still more indebted to it for supplying him with the best material used in his calling. Tradition, anecdote, and poetry have also invested the Walnut with an interest not possessed by other trees, and most people know that barbarous distich, often quoted in gardening works, yet seldom or never attempted to be explained, running thus—

"A woman, a dog, and a Walnut tree,
The more they're beaten the better they be."

Leaving to others the task of explaining why the two first mentioned should be improved by beating, I am by no means certain but that the last is. A severe beating is, in a certain sense, a rude pruning—small branches and short shoots are broken off; and though I cannot possibly affirm that the tree bears better in consequence, there is every probability of its doing so, or at all events the fruit it does bear may be better in quality; in fact, it may derive all the benefit which to another fruit tree may result from more scientific pruning.

The Walnut seems to thrive best in a dry stony soil, and although it does not attain the same height as our largest Oaks or Elms, it nevertheless becomes a tree of considerable size, with a fine spreading top and proportionate limbs. Its handsome pinnated foliage is about the last to unfold itself in the spring, and the earliest to fall in the autumn, and after the leaves have fallen they turn to a darker hue than that of most other trees, for some of the colouring matter which abounds in the husk is also, probably, contained in the leaves. Walnut trees, as a whole, resemble each other as much as most trees, and make a uniform and agreeable avenue. As regards their fruit, however, they differ more or less from each other, it being larger in some than in others, and thicker or thinner in the shell. Walnuts having the thinnest shell, though good at the time of gathering, do not keep so well as the thicker-coated ones.

The Walnut, whether as a useful or ornamental tree, deserves to be more frequently planted than it is, and a few trees on a dry steep bank will often be found more profitable than most other crops in such a position, and the tree, too, possesses greater beauty than many recent introductions.—J. ROBSON.

THE PORTABLE ORCHARD.

(Continued from page 210.)

Budding is performed as soon as mature buds are to be found on the summer shoots. Very dry weather is unfavourable, because the bark of the stock will not separate freely, and the evaporation is excessive. Generally in this country we have a large amount of rain during the latter half of July and beginning of August, and this time, therefore, is generally the best season for budding; but the operation may be performed with success as late as September, unless cold comes early. Stone fruits are most commonly budded because the ordinary method of grafting will not produce healthy trees. I do not think it matters which method is used, and so use either, just as I happen to be able to procure scions and stocks. The only case where budding will not answer is that of reworking old trees. We must remember, however, that a tree budded in summer is no further advanced than one grafted the following spring.

The *modus operandi* is as follows: Take a young shoot of the variety to be budded, having mature eyes in the axils of the leaves, and cut off the leaves within a quarter of an inch of the petioles. The object of this is to stop evaporation from the leaf. Next cut a slice of bark and wood about $1\frac{1}{2}$ inch long, containing one of the buds about the middle (fig. 11). Then, with the spatula of the budding knife, remove the wood by inserting the ivory under the bark at the upper end of the slip containing the bud, and with a jerk force the wood out. You must accomplish this by bending the wood and not the bark, for if any damage is done in the separation you will thus insure the mischief remaining with the wood. If two pieces of paper are pasted together and you try to separate them, the one you bend is sure to be torn. You cannot avoid bruising the bark a little where you insert the spatula; this is the reason for choosing the upper end of the slice, for this end will be cut off presently. If you have done this nicely you will see the pith leading to the eye as a green prominence. Some gardeners assert that unless the eye looks full in this way, the bud will not grow; but I cannot say that I believe this, for I have seen eyes looking quite hollow grow vigorously. If the stock is dry, then, no doubt, a hollow eye would be unlikely to be filled up

before the bud had perished from want of sap. The slip so prepared is called the "shield." Fig. 12 shows the inside of the shield, and fig. 13 is a representation of it in semi-profile.



Fig. 11.



Fig. 12.



Fig. 13.

Your next step is to cut a slit about an inch long with a cross cut at the top, making a long T, as it were, on the stock—the cuts should go just through the bark; then with the spatula raise the bark on both sides by beginning at the angles of the T (fig. 14).

Now insert the shield under the two angles of the flaps of bark, and slip it down to the bottom of the longitudinal cut. (See fig. 15, which represents the bud inserted, but the top of the shield not cut off.) If you find it requires pressure you may use the edge of the spatula on the top of the shield, taking care not to bruise any portion that will reach so low as the cross cut.

Having got the shield into its place, cut off the upper end of it by passing the knife again over the cross cut. It is of consequence that the cross cut of the shield and stock fit exactly, so see that the shield has not slipped before binding up. If all is right, bind up firmly with cotton wick, beginning at the bottom, being cautious not to tie the bud so as to prevent its growing. By using a piece of cotton about a foot long, and placing the middle of it against the stock and crossing backwards and forwards, there is no difficulty in bringing one crossing just at the base of the leaf-stalk and the next close above the bud, but leaving it clear. No grafting wax is needed, and nothing more is to be done for a month or six weeks, when the tie should be loosed and put on again with open turns, and only tightly enough to keep on. You will see whether the stock has swelled so as to make the ligature likely to cut into the bark. As long as there is no danger of this, the ligature should remain undisturbed.

The stock is *not* to be cut back at the time of budding, but in the autumn it should be cut off within two eyes of the inserted bud.

When the buds push in the spring the uppermost of the natural buds starts first, and it must be left to make six or eight leaves, and then the end leaf and buds beyond must be pinched off; similarly the next natural bud must be stopped at six or seven leaves. The inserted bud will now grow vigorously, and its shoot must be tied to a stick as in grafting. About the end of July, if the bud has grown so that its base is causing a swelling in the stock, cut a deep notch in the stock just where the bud-shoot comes from it—the object of this is to enable the shoot to deposit wood in the notch—and then in the spring following the top of the stock (or the snag, as it is called), is cut off by a cut from the side opposite to the notch, and the next season will see the wound healed; but if you make no notch, and cut the snag off in the autumn, you will find it no easy matter to get the wound healed, and very often a considerable portion of the stock opposite the scion will die, and have to be cut away time after time. I defer cutting off



Fig. 14.

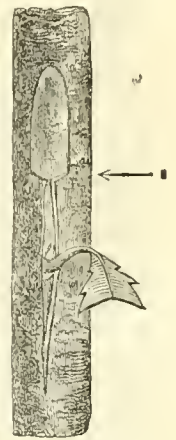


Fig. 15.

the enage till the sap is rising in the spring. In all cases cover over the wounds with grafting wax.

The grafting of all kinds of trees may be performed in a similar manner to the modes described. There is, however, a sort of grafting which is between grafting and budding, that is of considerable service in supplying defective shoots, and which is commonly used for improving Pear trees. I shall describe it here, as the subject is now in our minds. It is called the *side graft*, because the scion is inserted in the side of a stem or branch. The scion has only one bud, and that a terminal bud; according to the object for which it is inserted, a wood or a fruit bud is selected. The scion is cut so as to leave about 1½ inch of wood below the bud, the wood is then cut to a flat wedge on one side, and a thin slip pared off the lower end on the opposite side. Fig. 16 represents a Pear scion prepared for side-grafting. Then a cross incision is made in the stock as in budding, or a simple flap of bark (cut down to the wood) is formed, and the scion is inserted as in budding, and secured by a ligature. Grafting wax should be used to cover over the ligature. This side grafting is generally performed in the spring, at the same time as ordinary grafting, but it may be done in the summer. I have found a small and thin chisel slipped down the stock so as to raise the bark, a very handy tool for side grafting. This is, perhaps, the easiest of all kinds of grafting. I have used the Apple for the figures, except in this last case, where the scion is a fruit bud from the Pear.



Fig. 16.

duce wood; for our purpose we must choose stocks having roots of the former description.

The best stock for Pears to be cultivated in a portable orchard is the Quince. It makes abundance of fine fibrous roots close to the surface, and by slipping the knife through the bark, and cutting upwards, so as to make a tongue, roots are obtained on portions of the stock wanting them, just as in the Paradise Apple. Care, however, must be exercised in the selection of the sort of Quince, for there are many varieties of it. The ordinary sorts grown for fruit are not good stocks, the best I have seen have come from Angers, and I believe these are the same sort as the stocks used by Mr. Rivers. I mention this because I have had the experience of being supplied with a bad sort, through being tempted to save the cost of carriage of things whose price is much less than what I have to pay the railway company for bringing them from London.

Free stocks raised from Pear seeds are useful for forming large trees, and also for grafting with those varieties which will not live on the Quince, a rather numerous family.

The common Whitethorn is an excellent stock for several kinds of Pears. Marie Louise does remarkably well upon it, and Mr. Rivers has lately given the world the useful information that the Passe Colmar family thrive upon it, Joséphine de Malines amongst the number. Many other sorts of Crataegus will, no doubt, answer well for Pear stocks, and a wide field for experiment is open amongst them.

The Mountain Ash seems to offer a way of overcoming the difficulty of growing Pears in peat soil. I can give very little information about it, because I have never eaten a Pear grown upon it; but I have tried a wide range of varieties upon it, and all are growing without any signs of reluctance. I hope from time to time to be able to communicate to the Journal my experience on this subject. The Mountain Ash is used, I believe, to a considerable extent in America.

For Cherries, the common Wild Cherry and the Cerasus Mahaleb seem to be all that are needed, the latter having the dwarfing and rooting properties of the Paradise Apple and Quince.

Any kind of Plum seems to suit Plums, yet no doubt some sorts are better than others, but I can offer little information here. The common Sloe answers remarkably well with me. Acting on the hint in the "Miniature Fruit Garden," I dug up several one autumn, and grafted them the following spring, and very pretty trees have resulted. It is so great a satisfaction to transform Sloes into Green Gages, that I feel more pleasure in these trees than in almost any I have worked.

I must now say a few words about *double grafting*. You will have noticed that I have mentioned the fact, that some sorts of Pears will not thrive on the Quince, or live on it. Yet it is most desirable to have the Quince root, and this can be effected by grafting the Quince with a sort that thrives upon it, and then one or two years afterwards grafting this variety with the sort that refused to thrive when put directly on the Quince. A very short piece of the intermediate sort is required to be left. At the same time I must warn you, that you will not necessarily obtain good fruit by taking any sort that grows vigorously on the Quince as the intermediate stock. It is very strange how this small connecting link affects the fruit; in some cases it causes a great improvement, but in others just the reverse. I saw at Sawbridgeworth some Seckle Pears double-worked, the intermediate being Vicar of Winkfield, and these Seckles were clearly much improved by their treatment. On the other hand, I grafted a Marie Louise on a Seckle, and the Marie Louise is uneatable, though beautiful to look at, far handsomer than the original from which the scion was cut, growing only a few yards off. The character of the wood is to a certain extent a guide in the selection, but this is, as I have remarked, just the sort of work for amateurs to follow out. A faithful record of results, good and bad, is sure to be a work of value. No artist is justified in trying experiments with new pigments in his picture; but if amateurs would use any new colours that artists wish to have tried, writing on the backs of their canvases the names of the paints applied, the results could not fail to be of value. If the pictures stand, those colours are proved to be safe; but if they fade away or turn black, the world suffers no loss, and artists will know that these colours must never touch their palettes. In this way amateurs in all subjects may comfort themselves over their failures.

I will give at the end a list of those Pears which seem to thrive best on the Quince.

Cherries, again, will not all grow on the Mahaleb stock, and we must have recourse to double working for the class of Bigarreans and Heart Cherries. The Morello and Duke families grow perfectly on the Mahaleb, so that it is best to bud one of these the first year, and use the shoot from this bud as the stock the year following.—W. KINGSLEY.

(To be continued.)

NOTES AND GLEANINGS.

The following prizes are offered for competition at the next meeting of the Fruit Committee of the ROYAL HORTICULTURAL SOCIETY, on the 6th of April—viz. :—White-spined Cucumber, one brace, of one sort only (open), £1 and 10s.; Black-spined Cucumber, one brace, of one sort only (open), £1 and 10s.; smooth Cucumber, one brace, of one sort only (open), £1 and 10s.; six Cucumbers, not confined to one sort (open), £2 and £1. We understand that the terms as above used will be interpreted strictly, so that the rather numerous class of white-spined fruit with black tips can only be exhibited in the fourth class, which may include all the varieties, or only one.

A NEW part of the JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY has just been issued under the able editorship of the Rev. M. J. Berkeley. It contains an admirable paper by the Editor on various forms of canker, a note on the cultivation of the Mangrove tree at the gardens of the Royal Botanic Society of London, by Mr. W. Sowerby, and other matter of an interesting character on horticultural subjects.

The complaint so often made lately of the tardiness with which the Proceedings of the Society reach the Fellows is now removed. Every fortnight a sheet will be issued containing extracts from proceedings, and all Fellows may obtain it on application at South Kensington.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHEEL manure upon quarters where it may be wanted, and see that there is a good supply prepared for the Celery crop, for without plenty of old rich manure large crisp Celery can hardly be obtained. As soon as the weather becomes warm, plant out spring-raised Cauliflowers and Lettuces, selecting for them a sheltered situation and light rich soil. A few branches of evergreens stuck amongst them after planting, so as to screen them from the sun, are a great protection, and prevent their being dried-up until the roots take hold of the ground. Continue to make sowings of Peas, Beans, and Turnips once in

three weeks, and of *Spinach* once a fortnight. Successional sowings of all *salads* should be made with strict regularity, and proper attention should be paid to preserving them from the ravages of birds and insects. If the crops of *Onions*, *Leeks*, *Parship*, *Beet*, *Salsafy*, *Scorzonera*, and *Skirret* are not yet sown, no time should be lost, and the latest period for sowing the main crop of *Carrots* is at hand. A sowing of *Dwarf Kidney Beans* may now be made in early localities; the early sowing of this useful vegetable is not unfrequently cut off by late spring frosts, but when this happens the ground should be left undisturbed, as shoots will be produced from beneath the surface. Attend to *Vegetable Marrows*, *Tomatoes*, &c., and endeavour to form strong plants, keeping them near the glass, and freely exposed to air on fine days; avoid their becoming drawn by keeping them too close.

FRUIT GARDEN.

Disbud Peach and Nectarine trees as soon as the young shoots will admit of it, but do this carefully at first, and in a week or ten days go over them again and again so as to prevent a too sudden check to the flow of the sap, and to afford the fruit the protection of the leaves, &c., as long as it can be done without injury. Look sharply after green fly, and apply tobacco water the moment it is perceived. On light sandy soils, however, it may be kept in check by frequent washings with the engine. Whatever method is preferred, see that it is applied before such pests become established. The superfluous shoots of *Apricots* must also soon be removed, and the remainder carefully examined in search of a green caterpillar, which not only injures them but also eats holes in the young fruit, thereby causing it to gum, grow deformed, and fall off before it is stoned. Go over *Strawberry* plantations made late last autumn, and replant places where the plants have failed.

FLOWER GARDEN.

Those who force *Neapolitan Violets* should for the next three weeks or month propagate stock, either by means of cuttings or runners. Young stock of choice *Pansies* of last autumn's striking should soon be planted out in the flower-garden beds or borders. If the soil is in any way exhausted, a little fresh material should be put in every hole, such as old rotten loamy turf mixed with well-decayed leaf soil, a little soot, and a little coarse sand. Too much manure may induce larger blooms for a time, but it soon renders the plants unruly. Sow *Sweet Peas* and *Mignonette*. If the former are required early, soak them in warm water for several hours previous to sowing. *Shrubberies* should now be gone over, pruning incroaching branches, and removing all dead and dying limbs. Dead shrubs, if any, should be removed at once, and replaced by others from the nursery or reserve garden.

GREENHOUSE AND CONSERVATORY.

Among winter-blooming plants few are more attractive or useful than *Gesnera oblongata* and *Euphorbia jacquiniiflora*, both being profuse bloomers and remaining long in beauty. These should be extensively grown where winter flowers are valued, and, therefore, they should be afforded every necessary accommodation and attention at the present season, in order to secure good specimens for next winter. Attend also to affording other winter plants sufficient pot room and a growing temperature, so as to induce free growth and have the wood well ripened early in autumn. They will flower well throughout the winter. *Chinese Primroses*, especially the double varieties, are also deserving of every attention. Sow seed of the fringed and semi-double kinds, and encourage the seedlings with a moist genial atmosphere, shading slightly during bright days. Unless there is a good stock of young plants of the best double varieties at hand, the flowers should be picked off the old plants as soon as they show symptoms of weakness, shaking the exhausted soil from their roots, and repotting in light fibrous peat well mixed with sand, keeping the plants well down in the pots, and placing them in a warm shady situation. This will obviate the difficulty which many experience in the management and propagation of these showy winter flowers, for if the plants have not been too much exhausted by blooming, young roots will be freely emitted from every branch, and when this happens the plants should be broken up and repotted separately, affording them a rather warm and thoroughly moist atmosphere until they become well established, when with ordinary care they will grow and form fine specimens. *Fuchsias* intended for winter work must also soon receive attention; when growing freely the atmosphere can hardly be kept too moist, and they will also be benefited by occasional supplies of manure water. Young growing specimens of hardwooded

greenhouse plants should likewise be kept as moist and warm as can be done without inducing weakly growth. See that these are properly supplied with water at the roots, and do not allow them to sustain any check from want of pot room.

STOVE.

Train shoots of climbers as they advance in growth, also attend to the stopping and training of other plants, and allow free-growing subjects plenty of room. *Achimenes* and *Gloxinias* filling their pots with roots will enjoy an occasional watering with weak manure water. Persevere in keeping down insects, which if allowed will soon multiply with great rapidity. Proceed with repotting *Orchids* as they require it. Do not use the syringe too freely on such as are just started into growth, but keep the atmosphere thoroughly moist. See that specimens on blocks or in baskets are not allowed to suffer from want of water.

PITS AND FRAMES.

The cold which we are experiencing renders the management of bedding plants somewhat difficult. It is yet dangerous without great caution to risk even the hardier kinds from under the protection of glass. All that can safely be done until the weather becomes warmer in the way of hardening stock preparatory to its being planted out, is to give as much air as circumstances will admit without injuring the plants, and to place *Calceolarias* and the strongest *Verbenas* in turf pits, where they can be protected. Such plants when removed to cold pits should be planted out in light soil, which will save trouble in watering, and be much better for the plants than keeping them confined in small pots.—W. KEANE.

DOINGS OF THE LAST WEEK.

SATURDAY, March 20th, was a day of snow, and after rather a mild week, on Saturday, March 27th, there was a morning of severe frost for the season, fully 8° below freezing in a sheltered spot. Seldom do changes come so suddenly at this time of the year, as the preceding evening was mild and warm, and the atmosphere well studded with soft fleecy clouds. The first thing done in the morning was, in addition to the laurel twigs against *Apricot* and *Peach* trees, to scatter and fasten among them a little rough hay, as if it remain for two days it will do no harm, as the wind is cold and northerly, and then to scatter a little of the same over *Gooseberry* and *Currant* trees, as the *Pear*, *Cherry*, and *Plum* trees did not seem so forward as to be injured, more especially if there should be little or no wet with the frost. A little snow fell about 2 A.M., and afforded some protection. However, covering was made ready, and even cold frames, &c., received a little more, and no uncovering in such a keen day was resorted to until after 9 A.M., and very little air was given to anything under glass during the day, as where the heat was applied the fires were let out, and the heating left to the sun. Many little jobs, as moving plants from frames and pits, had to be given up, and other work, as barrowing, fencing, &c., resorted to, as nothing could be gained by moving plants from place to place in the open air in such a cutting atmosphere. Moving and regulating, and changing plants in houses from one part to another were quite different affairs, and even the short time that cuttings were exposed was of little moment, as they could be made in-doors, demonstrating, as lately alluded to, the superiority of houses to pits, even if for nothing else than their admitting of work being done in all weathers.

KITCHEN GARDEN.

We considered ourselves fortunate in having had the largest of our spring *Cucumber* plants planted out in the middle of the week, but as we had in the open air a lot of *Sea-kale* under pots, with nothing over the pots, we threw some litter over them, as we have had the young shoots frozen under such circumstances before now. Fine strong *Cabbages* of the *London Market* and *Enfield* varieties were all the better for the earthing-up they had recently received, as thus the stems were kept from the frost and cold winds.

What with wet, cold, and frost, we are becoming reconciled to having as yet sown so few seeds in the kitchen garden, as with our heavy soil the seeds are safer in their packets. We have a lot of *Peas* in semicircular drain-tiles in the orchard house, but we would like a change of weather before we plant them out and stake them. Even seeds sown a fortnight or three weeks ago have done little more than swell, without sending out their young plumules and rootlets, and they would be safer than those that had, as it were, chipped their shell

and were near the surface on the 27th. Many seedlings, perfectly hardy at other times, are comparatively tender just as the cotyledons or seed leaves are formed, though not yet protruded above the soil. Hence many seedlings, from seeds self-sown in autumn and the beginning of winter, will pass through severe frosts without suffering, whilst seeds collected and saved from the same plants and sown in the end of February or the first fortnight in March, will often fail because their vitality is assailed by frost and damp just at that germinating stage when they are very sensitive. Whilst, therefore, it is all very proper to recommend sowing vegetable seeds in the end of February and the beginning of March in the southern counties, and in light, easily pulverised land, we would wish it to be clearly understood, that farther north and in colder soil it will often be the wisest policy to defer for a week or a fortnight, until a fine warm seed bed can be obtained. In our practice we have sown Onions at the end of February and in the middle and end of March, and although the first have sometimes been the best, the last have quite as often come off victorious. We have often noticed in sowing the same kind of Pea at the beginning of January, in February, and in the middle of March, that though often the first sowing will come in the soonest, we have actually had the last of the three sowings earliest, and the crops generally more robust and fertile. Though we wish to have early Carrots, yet in such a changeable season as this, we shall be satisfied if we have the seed well in by the middle of April. Parsnips require longer time, and are more hardy. Even when the seed is chipping we have never found it injured by frost. It often surprises us that the Parsnip is so little used, but we presume its very richness makes it pall on the appetite.

We make these remarks to meet the cases of those who, like ourselves, have sown little as yet. It is always well to strive not to be behind other people, but with comparative beginners there is quite as much danger in sowing too early as in sowing too late.

FRUIT GARDEN.

In fine days got on with nailing, regulating, &c., and some of the work has already been indicated in the way of protection. We have also alluded to the importance of giving but little air in such a cold bright day as the 27th, either to forcing houses or to plant houses. It would be a rare case in which we should have given much front air to anything under glass in such a day. The throwing in lots of air in such days does injury to the plants, and wastes the coal heap. Of all heat there is nothing like sun heat. With only a little air given early at the highest part of the roof, sun heat will never injure or draw the plants if it should raise the house from 10° to 15° above the average night temperature. In the case of tender and new-potted plants it may be necessary to slightly shade, or to lessen evaporation by slightly sprinkling the foliage and damping floors and paths.

For *orchard-house trees* in bloom, the 27th was a seasonable day for ripening and scattering the fertilising pollen, but unless front ventilators were protected with woollen netting, &c., we should not have advised opening them. Ours remained shut all day. We could have plenty of air, without a strong current, from openings at the back. It is well to take Nature for our teacher, but we never could see the necessity for imitating in our glass houses the currents and gales of wind that are so often destructive out of doors. With air early given at the top of a lean-to orchard house, the sun of the 27th would not make the house too warm. From 10° to 20° rise in temperature would under such circumstances be safer than a greater rush of cold dry air. Everything that is grown under glass becomes more delicate, and more easily injured.

In forcing houses, strong fire heat and strong sun beat, and air to keep down the temperature in proportion, are very trying. In most cases fire heat and sun heat should never meet. In such a day, with a keen frosty wind, as soon as the sun begins to tell, the fires should be reduced or put out, and then less air will be necessary. Small openings at the top will allow the warmest air to escape, and the cold dry air that comes in will be warmed and moistened before it reaches the plants. Very small openings will set the whole air in a house less or more in motion. We have seen early Melons and Cucumbers next to shrivelled up from opening the sashes in front in a bright frosty day, when a little air at top would have kept them safe and comfortable.

ORNAMENTAL DEPARTMENT.

Here our work was much the same as in previous weeks—potting, propagating, and moving plants, but left much of the

latter undone owing to the weather. We have spent some time in shoring up an

Ivy fence, which is rather a pleasing feature, and as part of our doings, the matter may be interesting to some of our readers. Many years ago, in separating a piece of ground from the pleasure grounds, a brick wall or wooden fence was very much objected to. Under such circumstances, having a stock of small poles of Larch and Spruce, 2½ or 3 inches in diameter, we made a fence with them, from 5½ to 6 feet in height, setting the poles in the ground, and crossing them obliquely, so as to leave rather large lozenge openings between them, connecting the tops of the poles with a wooden rail. We then planted Ivy and strong-growing Roses, to run through and cover the fence, and for a number of years the effect was very pleasing. In course of time the Ivy overpowered and killed most of the Roses, but as an evergreen fence few things could be more appropriate than the rich green Ivy. The original fence of poles has long been in a rotten state, and the Ivy fence began to bulge and get out of shape, and merely to keep it up a post used to be put in here and there. As it was desirable to keep the fence as an object of interest and beauty, we resolved to have it done simply and effectually. For this purpose, on the inside of the fence, so as not to be seen from the pleasure grounds, we had holes dug 2 feet deep, in which to ram posts, formed of the but-ends of young Larch trees, ranging from 6 to 8 inches in diameter, the widest end going in the ground. These posts were fixed from 7 to 8 feet apart, to meet the length of some iron rods, which were from 14 to 16 feet in length. These rods were rather more than half an inch in diameter, and had been used for fencing. The posts, in a straight line, were firmly fixed, and in height less than the height of the fence. About a foot from the top of the fence the iron rods were taken through the strong interlaced Ivy, thus running in line with the fence, and flat iron rods, cut in pieces about 15 inches long, were turned up at one end, so as to clasp the rods, and at the other end were bent into a hook, to go into a staple in the post. The Ivy, with the rod thus pulled straight, was kept firm with these stout iron braces fixed securely to the post, and now no storm or tempest will ever move the fence, until the posts decay, which they will not do for many years. We have left the fence straight in the meantime, but if that be at all tiresome to the eye, we can easily break the outline, by allowing the Ivy to grow into curves and bays. Our straight line in one place is rendered necessary, from having a flat border of Ivy between the fence and the walk, which looks well as a change from the grass. Such bordering could often be had where grass would not grow.

As to the *posts*, the trees had been cut not this but last winter, and brought home; they lay until the heat of the spring caused the sap to flow, and they were then peeled of their bark. Posts made of such peeled wood last much longer than of wood with the bark on; they would last still longer if, after being thus seasoned, they were charred or tarred below and a little above the surface of the ground. As a general rule, there is only one disadvantage in peeling such young trees, and leaving them exposed to the sun and drought of summer—namely, that the wood will crack, and, therefore, not be so suitable for cutting up into boards and rails. This can easily be prevented by piling the trees in heaps, with cross bars to let the air freely among them, and then covering the top with wattled hurdles, and a little rough thatching, to keep out sun and heavy rains. For lasting work there will be no comparison between these and those left unbarked to absorb moisture, and to keep it about the wood. The bark of Larch, we believe, to be worth from one-half to one-third that of Oak, but we rather think that bark taken as above, from trees felled in winter, would not have the same tanning powers as that from trees felled after the spring growth had commenced. We are uncertain as to this, but we are certain if seasoned as above stated, the peeled trees would wear the best, though for some rustic work they would not look so well where first appearances were a great object.—R. F.

TRADE CATALOGUE RECEIVED.

Adam Forsyth, Brunswick Nursery, Stoke Newington. — *Descriptive Catalogue of Chrysanthemums, Dahlias, Fuchsias, Pelargoniums, and Miscellaneous Bedding Plants.*

COVENT GARDEN MARKET.—MARCH 31.

THERE is little to report, business being in a great measure suspended during the holidays. Some new hothouse Grapes of good quality have

come in, and sell for 25s. per lb. Kidney Beans and Cucumbers are becoming a drag in the market. The Potato trade is dull, and stocks of inferior descriptions heavy.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	2	0	2	6	Melons.....each	2	0	2	0
Apricots.....doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	12	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart.	0	0	0	0	Strawberries.....oz.	1	6	2	6
Grapes, Hothouse.....lb.	15	0	20	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	0
Asparagus.....100	5	0	8	0	Lettuce.....score	1	0	3	0
Beans, Kidney.....hd.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Mustard & Cress, punnet	0	2	0	3
Broccoli.....bunch	1	0	2	0	Onions.....bushel	8	0	10	0
Brns. Sprouts $\frac{1}{2}$ sieve	3	0	3	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Caulicums.....100	0	0	0	0	Peas.....quart	8	0	0	0
Carrots.....bunch	0	6	0	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....bunch	1	6	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers.....each	0	6	1	6	Rhubarb.....bunch	0	6	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bunch	3	0	5	0	Turnips.....bunch	0	4	0	6

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (E. M.).—Lindley's "Flora Medica" contains a description of all official plants. (R. U.).—"The Strawberry," by Johnson and Reid, forms the eighth of the "Gardeners' Monthly Volumes." If not out of print it may perhaps be obtained of Messrs. Bell & Daldy.

ASPARAGUS PLANTS (A Beginner).—Three-year-old plants planted now will not yield a crop this year, nor ought they to be cut in 1870. Rich liquid manure poured between the rows once or twice a week is the best promoter of the growth and production of Asparagus.

STORING APPLES.—Miss Brandreth informs us that "the finest and most delicious Apples she ever tasted, were kept in a small outside building somewhat resembling a butler's pantry, with a succession of unpainted shelves, made with holes to insert each Apple, in form like those which are in use to drain decanters. The building was on an eminence."

SYRINGING GLOXINIAS (Stammore, A.B.).—The plants now showing for bloom ought not to be syringed after this, but a moist atmosphere must be kept up by frequent sprinkling of the floors, walls, and other surfaces.

POINSETTIA CUTTINGS (Idem).—They are best covered with a bell-glass, but that is not very material if the atmosphere be kept close and moist, and a brisk top and bottom heat be provided. Your other question is answered by a paper in last week's Journal.

FUMIGATING (S. S.).—The evaporating pans will not raise moisture in sufficient quantity to cause injury to the foliage and fruit of Vines in a house filled with tobacco smoke. The foliage, however, should be dry when the house is fumigated.

GAS LIME (C. W. Foster).—The water in which gas lime has been placed will be, if at all strongly impregnated, injurious to the roots of plants or trees in the soil it is applied to, but we do not think it would be injurious from the way in which it was applied, though the fact of the Potatoes having been destroyed is a proof to the contrary. We advise the removal of the soil as you propose, and at once replacing with fresh. Pearson's "Vine Culture Under Glass" would probably suit you. It may be had post free from our office for thirteen postage stamps.

ZONAL PELARGONIUM LEAVES SPOTTED (Woodfield Amateur).—The leaves are much spotted in consequence of the attacks of some fungus, probably encouraged by a too close and damp atmosphere. Admit air on all favourable occasions, keep the plants as near the glass as possible, and allow each plant sufficient room to develop its foliage. The parasite may be destroyed by dusting the foliage with flowers of sulphur, which keep dry.

POTATOES IN POTS (S.).—Being in immediate want of the frame, you may place the pots out of doors in a warm sheltered situation, and protect them at night from frost by a covering of mats or other material, placing

stakes in the ground so as to keep the covering off the haulm. The best position would be close to a wall with a south aspect. Unless protected, the haulm would no doubt be cut off by frost.

PLANTING WILLOW CUTTINGS (Nottingham).—You would only lose by putting in Willow rods, 7 feet long; they would most likely only grow at the top, and would not form a screen. We advise you to cut the rods into lengths of 10 or 12 inches, plant them at once 6 inches apart, leave no more than two eyes or buds above ground, and make the soil firm round them. The best time to put in the cuttings is autumn, immediately after the leaves have fallen, or from that time up to March. Willows, however are proverbial for striking readily.

TRELLIS FOR CUCUMBERS (Crief's Subscriber).—The best distance for the trellis to be from the glass is 12 inches, but for winter we like it to be 3 or 10 inches. At the latter distance we have had Cucumbers for summer without the leaves being injured by scorching, indeed they cannot be too near if the foliage does not touch the glass.

GRAPES IN COOL HOUSE (Idem).—You may grow Grapes perfectly in a house having a night temperature of 50° with a corresponding rise from sun heat, and an increase of temperature as the season advances, the house to be started in the middle of March, and the Grapes to be mostly Black Hamburgs.

MELON-GROWING IN A FLUE-HEATED PIT (Idem).—Your flue-heated pit will grow Melons. The flagstones forming the bottom of the bed may be 1 foot or 1 foot 6 inches above the flue—more if you have space for soil, and head room for the plants. The joints between the flags should not be closed but left open, and at the bottom of the bed, or upon the flags, you should have 6 inches of rubble, 1 foot of soil upon that, and the surface of the soil should not be nearer the glass than a foot, nor further from it than 15 inches, unless you have a trellis, which may be 12 inches from the glass.

PLANTS FOR SURFACE-COVERING UNDER LARGE ASH TREES (A. L. R.).—No plants thrive well under Ash trees. They and Poplars are the worst trees to have in a garden or on a farm. The best thing you can do is to plant Ivy of the tree sorts, and train it over the ground beneath the trees; and the Periwinkles would grow, putting out good plants and watering during dry weather the first season.

VINES IN POTS (Reader).—You have the right idea of growing Vines in pots for fruiting in consecutive years; but we think you lack a surface dressings which are far more important than feeding by roots extending beyond the pots, for unless you can keep most of the roots confined to the pots, your hopes of success will be extremely small after the second or third year's fruiting. We should prefer the Vines to be planted out in the border, and they would not be encumbered by the annual cutting away of the roots which extend beyond the pots, which is root-pruning with the utmost severity. Though much practised and applauded, this is diametrically opposed to a plant's natural provision for continued fruiting and extension, the only sound system of fruit-growing. Your poles may be of any height the house will admit of, and we should train on the spur system, and have two shoots—one for fruit, and a second for next year's fruiting, cutting out the old shoot at the autumn or winter pruning, training up new rods occasionally to displace the old, but we do not think the rod system adapted to pot Vine culture. Vines grown on the Continent are inferior to ours, and the mode of culture there pursued is not suited to our houses, for the Vines on the Continent are in most cases horizontally trained, as espalier Apple and Pear trees are with us, and the fruit, owing to the shade, is neither so fine nor so well flavoured and coloured as English Grapes grown under glass. In this country the Vines make longer shoots than on the Continent, and they on that account require more room, so as to expose them fully to all the light our duller atmosphere affords.

GLASS SCREENS (An Old Subscriber).—We believe you may hear about the screens if you apply to Messrs. Rivers, Nurseries, Sawbridgeworth, Herts.

CHOROZEMA LEAVES BROWNED (A Subscriber).—The leaf sent is browned at the edge from water hanging upon it. This may be from the accumulation of moisture during the night, which a little air early in the morning would have dissipated before the sun's rays fell powerfully upon it. The only remedy is to give air more freely, and especially in the early part of the day.

AZALEAS GROWING (Idem).—Your plants are too vigorous, and the growth is not well matured, hence they start into growth prematurely. Do not pot so liberally, but obtain a good growth and mature it well, keeping cool in winter in a light airy house; 40° at night from fire heat will be sufficient heat in winter.

PLANTING ON VINE BORDER (D. M. Alexander).—We do not advise planting anything on Vine borders. Flowers and vegetables are equally injurious, depriving the border of air and warmth.

ORANGE TREES (A Norfolk Gardener).—You could not apply guano safely to Orange trees except in a liquid state, which you may apply at every alternate watering up to October, but not in more powerful doses than 2 ozs. to the gallon of water.

CLIMBERS FOR SOUTH WALL (Idem).—Wistaria sinensis, Passiflora cernua, Climbing Devonensis, and Cloth of Gold Roses, would grow rapidly and probably suit you, but you do not say how many you require.

APPLYING SALT TO KEEF OFF HENS (An Amateur).—We are not aware that salt will keep off hens, and you cannot apply it except in small quantity without injury to the plants. 1 lb. per square yard will injure all the plants you name. The dressing would not be safe unless the beds were empty.

AMARANTHUS ELEGANTISSIMUS (Idem).—It attains a good colour out of doors if sown early, forwarded in a hotbed, and well hardened off before planting out, which should not be done until the beginning of June.

CYCLOPSID SEED SOWING (Idem).—The seed should be placed in a hotbed after sowing to ensure germination, and if continued in a gentle heat the plants will be fit to prick off in a few weeks, or when they have two or three leaves. A hotbed of from 65° to 70° will be quite warm enough for the seedlings, and for the young plants the heat should not be so warm by 10°. Keep them near the glass, and with a moderate amount of air.

HAREFOOT FERN (Shrewsbury).—You must not cut down the plant at all, but allow the plant's fronds to fall of their own accord, as they will

when mature. For exhibition in June, the plant ought now to be placed in a house where there is a gentle heat, or in the cool part of the stove, and growth encouraged; keep it there until a few days before exhibition, then harden well off, and remove to the greenhouse or conservatory.

MANURE WATER IN EVAPORATING TROUGHs (D. R. C.).—The troughs may be filled with the manure water when the vines are started, but we think it better to use it rather weak until the leaves attain their full size, or until the berries are well set, using it stronger after that, and leaving it off altogether when the grapes begin to ripen.

CELERY PITTY AND HOLLOW (Oakham).—The great cause of this is a deficiency of water in dry weather, and sowing early, the plants not being grown quickly. Do not sow until March. Keep the plants growing without check, and plant out in June in well-prepared highly-manured trenches, watering copiously in dry weather. The evil may also arise from the ground, or the sort grown. The red sorts are generally more solid and in every way better than the white, though the white kinds are best for summer and early autumn use, as they are more easily blanched.

FLOWER GARDEN PLANTING (Idem).—We cannot plant; we only undertake the criticism of proposed plantings.

SNAKE CUCUMBER CULTURE (R. H.).—The seed should be sown the same as that of the cucumber, in pots, potting off the plants when large enough singly, and transferring to pots of larger size as they require it, stopping and otherwise treating the plants as ordinary cucumbers. A hot-bed answers well for the plants whilst in small pots, but when they become too tall remove to a stove or house having a moist growing atmosphere of from 60° to 65° by night, and from 75° to 80° or 90° by day, with sun and air, affording a light and airy position. We have grown them in 9-inch pots. A stake should be placed in the pots to train the plants to, and it need not exceed 3 feet in height. Large pots may be used, but 9-inch or 11-inch pots are quite large enough. The soil should be the same as for the cucumber. Remember the fruit is poisonous.

MONOCLETUM MULTIFLORUM PROPAGATION (Idem).—Take cuttings of the half-ripened young wood, and insert them in sandy peat, surfacing the pot with sand, and cover with a bell-glass; then place in a bath of 70° and keep close, moist, and shaded. The cuttings are slow in rooting, but will do so in about six weeks. It is rarely that the plant seeds, and yet it may be raised from seed when procurable.

ROSA CENTIFOLIA (Subscriber).—The proper name is that you have given. It is the Provence or Cabbage Rose, called hundred-leaved (centifolia) on account of the great number of its flower-leaves or petals. It may be had of any nurseryman.

ERADICATING HORSE RADISH (Idem).—We do not know of any better mode of destroying it than by cutting it off as often as it appears, dropping into the hole some salt each time, but only a pinch between the finger and thumb, otherwise it may injure other crops amongst which the horse radish is growing. The plants should be cut off as often as they appear throughout the summer, this will weaken and ultimately destroy the roots.

GREENS FOR WINTER USE FOR RABBITS (Idem).—The rabbit will devour almost anything. Parsley, which may be sown now; Swedish Turnip, which should be sown at the end of May or beginning of June; Curled Greens, which may be sown early in April; also Savoy, Cabbage, and Cottagers' Kale.

STRAWBERRIES (Young Subscriber).—You may obtain the varieties you name of any nurseryman who advertises in our Journal.

COCO-NUT FIBRE REFUSE FOR FERNS (Ignoramus).—The fibre from the mat manufactory is of no use for potting ferns, except for placing in thin layers over the cracks at the bottoms of the pots; but the refuse which is like mahogany sawdust is good for potting, and may be used as a substitute for, or along with peat and loam. The plants scorched by the bursting of a fine will no doubt recover in time, but a few may die, yet that will not, we think, be general. In winter they should have no more water than enough to keep them fresh, the soil never being allowed to become dry. Green fly is injurious to all plants infested with it, and ferns are no exception. Fumigate the house with tobacco, filling it quite full. The foliage of the plants must be dry at the time of fumigation, which is best done on a calm evening. Worms are injurious in fern pots. Step the holes in the pots, and saturate the soil with lime water, the worms will then be destroyed or come to the surface. An hour will be sufficiently long for the holes in the pots to be stopped, then open them and allow the water to drain away.

AZALEAS FLOWERING UNEVENLY (Idem).—It is owing to the buds not being well set, or the growth not being matured. The plants may not have had sufficient encouragement to make a good growth, and it has not been sufficiently ripened. They should be placed in heat and encouraged with a moist atmosphere to make a good growth, exposing them well afterwards to light and air, so as to thoroughly mature the growth and set the buds.

GRUBS IN TURF (Cricketer).—The amount of ammonia in gas water differs too much to enable anyone to specify the quantity of common water required to dilute it, so as not to destroy the grass. You may test it by pouring some on the grass unmixed with water, and some mixed with various proportions of water, that which does not turn the grass brown might be used; but then, we fear, it would be too weak to kill the grubs. The most effectual proceeding would be to remove the turf, cutting it very thin, seek for the grubs, and soak the soil with the strongest ammoniacal liquor, and then after a few days relay the turf.

FLOWER-GARDEN PLAN (Stanhope).—We cannot plant; we can only criticise proposed plantings.

PLAN OF GARDENS (J. W. Laycock).—We think that the place as laid out will be very interesting, and much more so if you give to each part a distinctive feature. Thus, if you plant out mounds No. 1 and No. 7 with Hollies about 15 feet apart, you could fill-in with Laurels, Lilacs, and Spiræas; all these to come away as the Hollies grow; then the north side of No. 2 you could plant with a row of Laurels, to be kept cut-in, and nearer the grass verge you could have Laurustinus and evergreen Berberis of the best kinds, which would present a neat appearance in the winter and spring months. No. 3 might have two or three scarlet-blossoming Thorn trees, but the centre chiefly filled with Evergreen Oaks, with a border round of Laurustinus. No. 4 would be well centered with Arbutus, a ring round of Daphne laureola, and then low bedding plants

to the verge. No. 5, the one bed, is all very well, but instead of the other borders round the sides of the mansion we would prefer a few beds grouped on the sides of the lawn. Having dug borders up to a house always conveys the idea of limited space, and also of damp in the walls. We think that the north side of No. 6 will do admirably for what you propose. With oblique cordons on the walls, and vertical training on trellis in four divisions of the kitchen garden, we should in front of the other quarters have dwarf bushes, and in other parts dwarf pyramids. Even in the orchard you will have more pleasure in dwarf trees than in tall orchard trees.

FLOWER GARDEN PLANTING (M. A. T.).—The chief merit of your plan is having so much grass round the beds. In the plan itself there is but little of the artistic attempted. It may be said to consist of three lines of beds, each row having five beds in line. With the exception of the three middle beds in the middle row, the other beds might have been of almost any shape, without disturbing the symmetry of the plan. Again, as the lines of beds run from east to west, and are backed by evergreens on the north and west, and by the mansion about 20 yards to the east, we would pair the beds, not as you have done, by making two pairs in each of the outside rows, but pair them transversely. Thus, supposing we make the five central beds your central line, we would plant them as you propose, merely adding blue Lobelia to the two end beds along with Pelargonium Mangleis as 3, 3; but then, instead of pairing 5 and 7, and 10 and 11, &c., we would begin at the east end, and pair 8 and 13, 7 and 12, 6 and 11, 5 and 10, 4 and 9. Thus—

9	10	11	12	13	house	
3	2	1	2	3		
line of beds 3, 2, 1, 2, 3, we would have been	4	5	6	7	8	

tempted to have had an open glade of turf up to the background of Laurels, and would have grouped the beds on the north and south sides.

GRAFTING STANDARD ROSES (D. H.).—“The time for grafting Roses is now, if the weather is genial. I have not grafted mine yet on account of the cold, drying east winds. It would have been better to have taken off the scions earlier, but they answer well if put on stocks the same day, if the buds are not pushed too much; if they are much so, break them off and rely on the side buds which there are to each bud. The scions must be of last autumn's growth. Take the top off the stock horizontally, and place the scion in the cleft as before directed. Your stocks of last year's growth will do, if sound and thick enough.”—HARRISON WELLS.

THUNBERGIA LAURIFOLIA CULTURE (J. Bayly).—Yours is no solitary instance of failure in blooming this plant. It is so subject to red spider that the growths are rarely matured, and the flowers drop in the succeeding year in consequence of the plant having been deprived of its juices in the previous year by the spider. The most suitable compost is one part fibrous loam and one part sandy peat, with one-fourth old rotten cow dung, and one-sixth old lime rubbish well mixed, good drainage being given. The growth should be cut in rather closely in spring before it begins to push, say in February, leaving, however, enough of well-ripened wood for flowering. Then, placing the plant in heat, sprinkle or syringe it twice a day, potting when the shoots are a few inches long, and shading for a few days until established. As the season advances afford slight shade from powerful sun, and apply flowers of sulphur to keep down red spider, syringing copiously twice daily. The temperature from October to February need not exceed from 50° to 55° at night, keeping the soil dry, but not so much so as to cause the leaves to fall prematurely; and in summer the temperature should not exceed 60° or 65° at night, and 70° or 75° by day, with a rise of 10° or 15° with sun. Air should be freely given at all seasons. Our correspondent says he “will be obliged to any reader of THE JOURNAL OF HORTICULTURE if he will inform him where he can procure plants of *Ischrochoma coccinea* and *I. Warszewiczii*,” having applied at several nurseries without success.

TROPEOLIDS NOT FLOWERING FREELY (J. W.).—If your plants give you plenty of leaves and few flowers, your soil is too rich. Employ a compost of one-third turfy loam, one-third sandy peat, and one-third lime rubbish, taking out the soil of the bed and replacing it with the above materials, well mixed and made firm, so that the growth may be less vigorous and shorter-jointed, and the plants may be plunged in their pots with the rims of these an inch below the surface. If grown in pots, keep under rather than overpotted, affording an airy, light position.

COMPOST FOR CAMELLIAS (Idem).—The best compost for the Camellia is the turf from an old pasture where the soil is a sandy or light loam, paring it off an inch and not more than 1½ inch thick. Tear it in pieces with the hand, make it rather fine, and with this pot rather firmly—indeed, consolidate it well, placing the finer parts at the top of the pot. A mixture of turfy loam and peat is better than all peat, but we have grown them well in both separately.

GATHERING AUCUBA BERRIES (A Subscriber).—The berries may be left on the shrubs until they begin to shrivel, or until they begin to fall, which they will do in a short time, and they should be sown at once in moderately rich light soil.

SULPHUR IN VINEY (L. M. C.).—You may use it now as you propose.

HORSE RADISH PLANTING (J. A.).—Horse radish planted 2 feet deep—the proper way for securing good, long, straight roots—will show the leaves in May or June, or it may be later; but they are sure to appear the first year—i. e., those from the majority of the pieces planted, and by the autumn of the second year there will be fine roots.

VICAR OF WINEFIELD PEAR (Idem).—This Pear is apt not to ripen, and is seldom melting—rarely more than half melting. It is not worth a wall. We should cut it out, and supply its place by encouraging the *Easter Beurré*.

SHAMROCK (Hortus).—It is disputed whether the Shamrock adopted in the early ages of Christianity as the emblem of Ireland was a Clover or the Wood Sorrel. We incline to think the latter, for some authorities say the Irish ate Shamrocks, which they could not do if it was a Clover, but the Sorrel is a pleasant salad herb. Sir Henry Ellis gives these quotations, and they sustain our opinion:—“In Wyther's ‘Abuses Stript and Whipt,’ 1613, page 71, he says—

“And, for my clothing, in a mantle gown,
And feed on Sham-roots, as the Irish do.”

Between May-day and harvest, ‘butter, new cheese and curds, and Sham-rocks, are the food of the meaner sort all this season’ (Sir Henry Piers's ‘Description of West Meath,’ in Vallancey's ‘Collectanea de Rebus Hiber-

nicle, No. 1, page 121). 'Seamroy, Clover, Trefoil, worn by Irishmen in their hats, by way of a cross, on St. Patrick's-day, in memory of that great saint' ('Irish-English Dictionary,' in v.)"

CLIANthus DAMPieri CULTURE (*Clanthus Damp-off*).—This is not in any sense an annual, but a biennial, if not perennial, flowering in March and later. The seeds should be sown in March or April, singly in 24 or 3-inch pots, and placed in a house having a night temperature of from 50° to 55° in a position near the glass, as on a shelf or the curb-stone of a pit. Take care not to allow the pots to become very full of roots before the plants are shifted into pots two sizes larger; indeed the plants should be shifted as soon as the roots are found coiled round the base of the soil, and this should be repeated as required throughout the summer and autumn months, which will prevent the plants from being checked by the maintenance of a slow but progressive growth throughout the autumn and winter months, the temperature ranging from 45° to 50° at that period. Transfer the plants to a cool and well-ventilated greenhouse as the summer advances. In the case of early-sown seeds, say in March, the plants may safely be placed in a hotbed or cucumber frame, and be partially plunged. They may be removed in May or June to a warm greenhouse, and finally placed in a cool, airy house for blooming. A compost of turfy yellow loam two-thirds, and the remaining third silver sand, charcoal broken, and leaf mould in equal proportions, the whole well mixed, will grow it well, good drainage being given. If the loam is not very fibrous, and it ought to be, one-third part of sandy fibrous peat should be added and intermixed. The seedlings have a tendency to elongate the stem above the soil, and it ought not to be buried, but at each successive shift to larger pots allow the base of the stem proper to be exposed above the surface of the soil. This will keep the plants in most cases from damping off, by bringing the root organs within the influence of the atmospheric agencies of light and heat, and is an essential of healthy growth.

SOWING GLADIOLUS SEED (B. B.).—The seed ought to be sown now in a seed pan rather thinly, in a compost of two parts sandy loam, one part sandy peat, and one part of sharp sand; place in a hotbed or house with a gentle heat of from 60° to 65° or 70°, admitting air freely when the seed-

lings are up. In June remove to the open ground, water freely in dry weather, and if very wet weather set in, protect from it, but allow the plants the full benefit of gentle showers. Take up the bulbs in autumn after the leaves decay, keep them in a cool dry place during the winter, and plant out in March in well-prepared beds in a warm situation, allowing 4 inches from bulb to bulb every way. The seed does not generally succeed well sown in the open ground, but it may be so sown in April.

GOURDS FOR OUT-DOOR CULTURE (J. A.).—The best Gourds for eating are the Ohio Squash and Large Yellow; Mammoth and Large Green are also good. Garibaldi and Turk's Cap are ornamental sorts, of whose eating qualities we have no experience, and have no faith in them for such purposes, as our climate is much too cold for their rapid growth and full maturity, which are essentials in the culture of Gourds for culinary purposes.

MAGNOLIA UNHEALTHY (L. R.).—The roots we should think had penetrated too deeply and into bad soil, the drainage at that depth not being efficient. We would lift the tree early next autumn—in the end of September or beginning of October, preserving as large a ball as possible, and replant. Previous to doing so take out the soil 2 feet 6 inches deep, concrete the bottom, or place slates over it, to keep the roots from penetrating straight downwards, put in 6 to 9 inches of rubble for drainage, and use a compost of two parts loam, one part peat, and one part old cow dung, well mixed, for planting with.

BEECH FOR HEDGE (G. D. B.).—The plants we should permit to grow at will, as far as regards height, trimming the sides every winter or spring, so as to keep the side shoots within bounds; and cut off the tops of the plants when within 1 foot of the height you require the hedge ultimately to be.

NAMES OF PLANTS (Ventnor).—We cannot name plants from leaves only. Send a sprig when in flower. (J. W. Dick).—1 and 2, *Genista canariensis*; 3, *Genista Spachiana*; 4, *Acacia hybrida*; 5, *Platyloma rotundifolia*. (J. Fleming).—1, *Epacris impressa*; 2, *Libonia floribunda*. (L. C. A. A.).—A *Melaleuca*, near *M. hypericifolia*. (*Bellegarde*).—*Arbutus unedo*. (G. S.).—*Thuja occidentalis*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 30th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 24	30.131	31.051	46	35	41	41	N.E.	.00	Fine and frosty; overcast; cloudy, but fine.
Thurs. 25	30.013	30.000	49	29	43	41	E.	.00	Overcast; cloudy and fine; densely clouded at night.
Fri... 26	29.913	29.614	49	28	43	41	N.	.01	Overcast; densely overcast; clear and fine.
Sat.... 27	29.727	29.525	42	23	43	41	N.	.02	Fine; cloudy, cold wind; cloudy, but fine.
Sun... 28	29.672	29.456	40	33	42	41	E.	.00	Overcast, very dull; foggy; very dark; densely overcast.
Mon... 29	29.848	29.638	43	27	42	41	N.E.	.04	Clear and cold; boisterous and stormy; clear and fine.
Tues... 30	29.854	29.776	45	36	42	40	N.E.	.00	Densely overcast; cloudy, brisk wind; overcast.
Mean	29.879	29.724	44.86	30.14	42.23	40.86	—	0.06	

POULTRY, BEE, AND PIGEON CHRONICLE.

VULTURE-HOCKED.

ALLOW me to correct a very general and popular mistake in your reply to "W. H." in last week's Journal, respecting vulture-hocked Brahmas. It is stated in reply:—"The vulture hock is a term applied when the thigh feathers project much beyond the knee-joint, as they do in the Vulture." I have invariably, when myself writing on this subject, taken care to steer far from this too-generally-mistaken notion, for the feathers of the thigh of the Vulture, as any visitant to a zoological garden can himself determine, and most naturalists themselves know, do not extend beyond the junction of the tibia and the tarsus. It is in the Falcon tribe only that among birds of prey this peculiarity exists; and I really feel that, to make things understood as realities as well as by name, this misnomer of "vulture-hock" is far more wisely honoured in the breach than by the observance. I am assured that everyone, now poultry-breeding is really becoming a science and matter of prominent importance, will excuse my thus correcting an error of so general an acceptance, and one calculated rather to mislead than encourage a desire for poultry culture.—EDWARD HEWITT, Sparkbrook, Birmingham.

[It is quite true that most of the Falconide have what is popularly called the "vulture hock," but some of them have not—as *Falco bidentatus*, *F. caernlescens*, &c. It is also true that some of the Vultures are not "vulture-hocked," but many of them are. The Bearded Vulture, the Maltese Vulture, the Pondicherry Vulture, the Egyptian Vulture, &c., are examples.—Eds.]

FOWLS EATING EACH OTHER'S FEATHERS.

My advice to fanciers having fowls that eat each other's feathers is at once to break the neck of the hen or hens so doing. I have scarcely ever known a cock pluck the feathers

of a hen, but have often met with hens that take a pride in "trimming" up a cock, and this is generally done by one particular hen. Watch for the right hen, and at once destroy her, unless she is a valuable one; if so, see that the fowls have a plentiful supply of green food, and also some sheep's bellies or panniches boiled with bullock's liver, and chopped fine with a little suet; a little should be given every day, taking care not to overdo it. Make a strong solution of bitter aloes of the thickness of cream, and take two or three wing feathers and smear or daub it over the parts of the cock that the hens are in the habit of picking. I have recommended this method to several fanciers, and have tried it several times myself, and have never known it to fail.—S. W. SMITH.

POULTRY AND THEIR MANAGEMENT.

(Concluded from page 218.)

WE now come to the domestic Duck, which was derived from the wild Duck. Ducks of all kinds should be kept in a house separate from other poultry, and with a brick floor to admit of its frequent washing; give them plenty of room. They are the least expensive of any fowl to keep, as they soon find food for themselves. Boiled roots, with a little barleymeal, are good for them. When fattening add milk and Dear's food, to which I before alluded. Eleven eggs are enough for an ordinary-sized Duck to sit upon. Their eggs do not keep so well as the common hen's, so they require to be set as fresh as possible. The nest should be on the ground in a damp place. Feed the Duck every morning and evening whilst sitting. Boiled but cold oatmeal porridge is very good for ducklings until they are ten days old; afterwards barley or poultry meal, oats, and pollard, with plenty of green food. They are ready for table in eight to twelve weeks if well fed. Never give hard spring water, but that from a pond. The Aylesbury Duck is a good layer, and has been known to produce 160 eggs within a year, each weighing fully 3 ozs. They are of the purest white plumage, pale flesh-coloured bill, and orange-coloured legs. The Ronen, or Rhine Duck, as the name indicates, is of foreign origin; it

has a rich plumage; and that of the wild Duck, in its relative sex, must be produced. It lays a great number of large eggs, weighing from 3 to 3½ ozs. each, shell thick, of a blue colour; its flesh is finely flavoured, and on the whole it is a profitable bird, and rarely strays far from home, but, as a rule, not a good sitter.

In Geese weight is an all-important feature; considering, however, that a combination of all points of merit should be aimed at in every branch of our poultry, I should recommend uniformity of plumage in this class. Lincoln is a celebrated county for Geese. One farm has been known to have upwards of three thousand Geese at a time, consuming during the season a hundred quarters of oats. They should be low on the leg, with the fullest development of breast. The Toulouse, originally imported from the Mediterranean, I believe, by Lord Derby, deservedly stand in the foremost rank; the clear orange red of their bills, the peculiar flatness of their foreheads, constitute distinctive points which readily separate them from the common specimens of this colour found in our farmyards. Deep tones of rich brown should be the predominating colours of the plumage of this bird, white being only found on the tail-coverts and under part of the body, also the extremities of a few quill feathers. Geese are easily reared, and breed to old age—twenty to thirty years is not uncommon. They require plenty of water and grass. Wild Geese are supposed to make the Arctic regions their quarters during summer. During winter they are frequently shot at the mouths of rivers and on marshy ground. A breeding stock should consist of a gander and three Geese. These are enough for an ordinary farmyard, as they will increase tenfold during the season, and fat Geese at Michaelmas always command a good price. Anyone having a meadow, with a brook or pond adjacent, would find a gander with three or four Geese very remunerative. They are excellent foragers, and may with their young be turned into the stubble as soon as the corn is carted. They will carefully glean whatever may be there left, and when they have a good run many may be selected without further trouble in good condition for the renowned Michaelmas dish. March is the best month for goslings to be hatched in; the period of incubation is from thirty-one to thirty-five days. When twenty-four hours old place near them a turf of green grass, bread crumbs, boiled rice, and pond water in a shallow vessel, that they can easily get in and out of. In about a fortnight, if allowed their liberty with their mother, they will pretty well shift for themselves by being fed now and then as other fowls.

I will now finish with the Turkeys, which may be made to pay on dry and light soils, but I would not recommend them for wet, low-lying land. The white are the most delicate. The Cambridge breed possesses the combined qualities of large size, speedy fattening, and first-class flavour. The tortoiseshell character of the plumage of this breed in adults has a prepossessing appearance around the homestead. For breeding purposes, a two-year-old cock should be selected for four hens, which should not be more than four years old. Size is very important in these birds. April is the best month for hatching. The poults require great attention until at least two months old; feed the same as chickens, with the addition of a little suet, and nettle and onion tops, chopped very fine and mixed with meal. A situation fully exposed to the sun, but protected from high winds and wet, is most advantageous. The rearing of Turkeys is steadily improving, for not long since not more than ten out of every twenty young Turkeys were expected to live; now, generally speaking, fifteen out of each score arrive at maturity.

In conclusion, I beg to say it will give me great pleasure to assist to my utmost any project for the improvement of poultry, either for table or exhibition; and permit me to remind you the Suffolk Agricultural Society intend holding their annual show for 1869 in Ipswich next July; and the Ipswich Poultry Society, which is composed of gentlemen that not only give their time, but money, for the furtherance of improvements in poultry, intend holding a great poultry exhibition at the same time, when will be given cups and money prizes amounting to nearly £200, and I venture to solicit all who can to pay it a visit, and I am sure it will well repay them.

EAST INDIAN WILD BREEDS OF POULTRY.

(Continued from page 200.)

GALLUS FURCATUS, or Forked-tailed cock of India and Java, is the next most common to the two former sorts, and is a

sort of red-dun bird. The cock has a whole single comb, not lobed or serrated, with only a single wattle under the throat, instead of double wattles, is reddish, with a blue-grey-dun breast and tail, and bluish legs. Hen, light brown partridge colour, with dull dun breast and tail, and bluish legs, and has neither combs nor wattles. This bird is said with great probability to be a hybrid between the two first-named sorts, and is so in my opinion, though many consider it distinct from either.

GALLUS JENEUS, or Bronzed cock, is of a bronze-yellow colour, the feathers more oval and plated than in the other breeds. The eyes and legs are yellow; the comb as in *Gallus furcatus*; the breast either blackish or of a yellow ginger, or, again, of a brassy or bronzy-green colour. Hen of a yellowish-greyish brown. This species is less like a hybrid, though not so common as the preceding, of which it may be one of the progenitors, though many consider it as also a hybrid, as it probably is.

GALLUS STANLEYI, found on the lower slopes of the Ghats, in India, also in Java and Ceylon, is described as a small, short-legged breed, with much red in the plumage. This is, however, merely another variety of the *Gallus ferrugineus* called by a different name. It is of rather a more rufous plumage, and the breasts of both cock and hen rather redder than in most Jungle fowl.

FIREBACKS are, strictly speaking, Pheasants, belonging to Phasianus, and not to *Gallus*, with fire-coloured backs (Fire-backed Pheasants). There is, however, a very red-backed breed of Indian Game fowls, which have also been called Firebacks, but these birds are rare.

GALLUS GIGANTEUS is probably a domesticated sort, not having been found wild, and is the large Malay of India and Sumatra. This has been called the fowl of St. Jago, or Santiago, in Sumatra. The cock averages from 2 feet 2 inches to 2 feet in height. A specimen of this bird, I hear, was in the Edinburgh Museum for some time. This sort has a thick comb slightly raised, and is yellowish or reddish in the cock, and brown in the hen, the same as in our large Malays. The size, inferior powers of flight and walking, and its not being found wild, all militate against this kind being classed as an original species, it being, in fact, the Malay itself.

In only one wild species, the *Gallus ferrugineus*, have the hens any combs or wattles, and, therefore, none of the other wild sorts can well be considered as the progenitors of any of our breeds of poultry. In India the yellow and green are the prevailing colours of legs, and birds with legs of these two colours will sometimes, when crossed together, produce blue legs, which are less common in India. The Brown Red and Blue Dun Game fowls crossed together will often produce in the cocks a colour much resembling that of the cock of *Gallus Sonnerati*. The wild Brown Reds of the *Gallus ferrugineus* are mentioned in an old work as of a mixed yellow, and blackish-brown plumage, dark under the feathers, comb and wattles yellowish dark purple colour. From the well-known large proportion of yellow-legged fowls in India, it is plain that there must have been some original wild yellow-legged breed for their progenitors, and this breed I consider to have been the yellow-legged *Gallus ferrugineus* major, as the rather smaller darkish-legged *Gallus ferrugineus* minor could not have produced so many yellow-legged native breeds, and so few dark-legged breeds as exist in India;—at least, such is not probable.—TREVOR.

(To be continued.)

GIVING WATER TO RABBITS.

In your Journal I see a query respecting giving Rabbits water. I have kept Rabbits for years, and will give you my experience. For four or five years I never allowed them to touch water, but after that, seeing something in a book respecting it, I gave them a little, and the old ones seemed to enjoy it much; but it had a bad effect on the young, giving most of them the "pot." Lately I turned a large, white, lop-eared doe Rabbit into a small enclosure, partly roofed-in, with an unlimited supply of good spring water. At first she drank very much, but after a time I observed that when she had made a meal on any dry food, she would drink a very little—to moisten her throat, I imagine, but that when green food was provided she never touched the water. The white varieties, however, are too delicate to be exposed to the weather, for the wet winter gave her cold, which she never got over, although housed in a warm hutch as soon as the severe weather commenced. It does not answer to leave water in the hutches, but

if the Rabbits have space to run about, I am sure it does them good; and my experience goes to prove that young Rabbits, unless turned into a shed or small enclosure, should never touch it until they are eight or nine months old. I always gave my does as much as they could drink.—H. KELSEY.

"H. A. J." may safely give his Rabbits an unlimited supply of water if he feeds them on dry food, such as bran, oats, &c., but when they have fresh green provisions, such as clover, cabbage leaves, parsley, and other vegetables, less liquid will be necessary. I always gave the doe Rabbits, when they had a young family (and I, living in the country, had a dairy), an ample supply of milk. It is an act of downright cruelty to keep any animal without water. Friends of mine had a guinea pig, which they were advised by some silly person to keep on dry food, and, although the poor little creature was well fed, it became as thin as a skeleton, and would have died if liquid had not been given.—HELEN E. WATNEY.

THE BARONESS VON BERLEPSCH.

AUGUST Baron von Berlepsch, one of the most distinguished among the scientific bee-keepers of Germany, married somewhat more than three years ago Lina geborene Welebil. This lady appears quite as enthusiastic as her husband with regard to bees, and is, moreover, exceedingly clever, being, I believe, mistress of several modern languages. Having recently corresponded with her, I can speak positively with regard to English, which she writes and speaks with remarkable fluency and precision. It may be remembered that the Baron prevented attending the great meeting of German bee-masters held at Darmstadt in September last, owing to his having been prostrated by a stroke of paralysis. The following article from the pen of the Baroness has recently appeared, and gives so interesting a glimpse of her married life under these adverse circumstances, that I am induced to submit a translation of it to the readers of "our Journal."—A DEVONSHIRE BEE-KEEPER.

BEHIND THE SCENES.

The delightful days of Darmstadt are over, and although it was not permitted us to be present, they are still endeared to us by many agreeable reminiscences. Behind the scenes, as it were, we might yet take part in the proceedings, and delight in the considerate attention which was so kindly shown us.

Our first visitor was the Marquis Balsano Crivelli, who went direct from Coburg to Darmstadt. In him we made the acquaintance of an enthusiastic bee-friend, and an amiable and honourable man. I count his brief visit as one of the flowers among the garland of joys which arose to us out of the meeting at Darmstadt.

As the sun of the 8th of September rose beaming in the heavens my heart indeed felt heavy, and it drew me powerfully towards the south. Hour by hour we followed in imagination the movements and proceedings of the assembly, and hailed with joyful emotion the arrival of the telegram which conveyed to us its greeting and kindly sympathy. It may be permitted to me to return to all and every one our heartfelt thanks for the honourable distinction which was thus conferred upon us.

Time passed on, and the meeting at Darmstadt over, Counsellor Kolb and his wife were the first who came to us, and, well pleased and happy, related all the pleasures which they had experienced. These were old friends, and we chatted and chatted until my dear husband became quite happy when we prepared for an excursion to the Callenberg, so that he might rest after all the friendly excitement. How these bright hours shine in the camera obscura of the memory! Merry gossip, alternated with more serious conversation, seen brought us to the charming castle and favourite residence of our Duchess, where a stroll through the rooms was succeeded by a glance at the private apartment of the great lady, which I can never recall but with deep emotion. There, on a table placed in front of the oriel window which commands such a magnificent view, lay a simple wreath of *immortelles*, which touched a chord within me, whilst unutterable sensations rushed keenly through my heart, like the wailings of an Æolian harp.

Descending from the castle we visited Curzins, the game-keeper and bee-master, who kindly exhibited his little menagerie, but pleased me best by calling together the deer, which ran at large in the park, in order to feed them with apples. By this time evening had set in—a fragrant and

misty autumnal evening. On one side lay the Castle of Callenberg, veiled in the twilight, and on the other the citadel gleamed bright in the golden rays of the setting sun, whilst before us spread the wide park, traversed by the noble deer which followed the melancholy "Come! come!" and fearlessly approached to receive the proffered dainty.

Günther also came to Coburg. He is to me a dear familiar personage, whose single-hearted attachment to my husband has about it something almost touching. With him appeared my husband's "dear friend" Vogel,* who visited us both on his way to Darmstadt and back, but whose visits were so flying that I scarcely got to know him. He is too staid and grave to make himself quickly at home, and I regrettingly saw him depart without having succeeded in picturing him exactly to myself. The community of feeling which subsists between him and my husband is, however, well known.

The same day which carried off Vogel, brought Hopf, who was all fire and flame, not only on account of Köhler's precess, but because of the Rhine voyage, which had also contributed to his excitement, although in quite a different manner. Verily this Rhine voyage must be charming, very, very charming.

Eight days after the departure of Hopf, we were enabled to greet Hruschka,† with which dear friend we had corresponded during a year before we learned to know him personally. Notwithstanding some differences of opinion, he has become heartily dear to us, and we often think of him with pleasure. With him our succession of company came to an end, for alas! the visit of our dear editor, Schmid,‡ which was intended as a surprise to us, was frustrated by the death of his little daughter. Whilst yet attending the bee-masters' meeting, a telegram called him back only to find his child extended upon her bier. One daughter a bride, the other with wreaths lying in her coffin— which may be the happier?

Having thus mentioned our visitors, and reported what occurred behind the scenes, I have still something on my mind. It seems to have been stated and believed at Darmstadt, that my articles may be the productions of my husband. Now the idea is so ridiculous, that if it were not insulting, it might be extremely amusing. Poor lords of creation! Have you never found a woman, who, without stepping out of her sphere, took an interest in something more than eggs, butter, and servants? Do you not know how to distinguish differences of thought and style? Can you not understand that my manner of writing is as impossible to my husband as his learned treatises bristling with quotations would be to me? Those who are not sensitive might not feel this, but at any rate a less hasty judgment is to be commended. I thank God that my dear husband's health is improving, and I trust the time will soon come, when by his sledge-hammer blows he will demonstrate *ad oculos*, that he has no especial penchant for my style of writing.

Whilst penning the foregoing our little dog was brought in, he had been run over by a stage coach. Four hours later he was dead. Many bee-friends will remember our pretty Sepp, which my husband had so long ago, when he was in Getha. He was only a dog, but his loss has caused us bitter pain. He who knows mankind learns to value dogs for their fidelity and unwavering affection. Let these words be Sepp's monument.—LINA, BARONESS VON BERLEPSCH, Coburg.

* Introducer of the Egyptian bee.

† Inventor of the centrifugal honey-extracting machine.

‡ Andreas Schmid, editor of the German Bee Journal.

OUR LETTER BOX.

DORKING COCK NOT ASSOCIATING WITH HENS (*Constant Subscriber*).—Fowls have their fancies, and will not always take to new companions. As a rule the aversion is only temporary, and probably will be so in this instance. We dare promise as much if the bird is in health; if he is not he will not be sociable till he is.

HENS LEAVING THEIR NESTS.—EGGS TOO DRY (*Calamity*).—In such weather as the present, and at this time of year, hens should not be off their nests more than a quarter of an hour. In summer it does not matter if they are off an hour and a half. All that is required is that they should eat, drink, &c. The death of the chickens in the eggs has nothing to do with the hens being off their nests, the chickens die from their eggs being too dry; the inner membrane is as dry and hard as indiarubber, and the chickens cannot penetrate it to escape from the shell; they try till they die. For ten days before the eggs hatch they should be plentifully sprinkled with water every morning. There will then be no difficulty.

BLOOD IN EGGS (*L. T.*).—The cause of that of which you complain is inflammation. It is useless to change the breed, as it is caused by something which they pick up and eat. It has nothing to do with staleness. We have known it caused by birds drinking water in which servants had

emptied the poison with which they cleaned boot-tops. The practice was discontinued, and the eggs became thoroughly good.

BOARDED FLOORS FOR POULTRY (*Constant Subscriber*).—The condemnation applies equally to a roosting house. When the fowls come down in the morning they find no scratch, and till they leave the house their feet are always kept in a strained unnatural position.

POULTRY MANAGEMENT AND FOOD (*Black Hamburgh*).—Good oats or barley meal mixed with milk are good feeding. A small quantity of good food is preferable to a large quantity of inferior quality. We do not care much for wheat or sharps. As you say the fowls roost above the cart house, we presume they inhabit a farmyard. If so, there should be roosting places without resorting to a first floor. Let them choose for themselves—under the eaves of a barn, in an unsued calf pen, or a similar place. Wooden flooring is very bad, because it has a cold dampness, it admits of only one position of the foot, and does not allow a scratch. We can give no opinion about your breeding prize birds if we have no data but the numbers you keep. We can only say they are correct as far as the exs are concerned; you will shortly have to decrease the number of cocks. No fowls require trimming, or are allowed to be trimmed, except Game fowls. We do not hold with or make use of any of the condiments you name. Red combs are an undoubted sign of condition, and the result of good food supplied to a healthy body. Good barley and oatmeal, with a little whole corn at times, some milk, some cooked meat, and it may be a handful of Indian corn, will promote and maintain condition, will cause red combs, and, added to cleanliness, contribute not a little to success. Good management will sometimes bring first-rate produce from moderate parents; but the result is more probable when the parents possess the qualities that are desired in the offspring.

HOUDANS (*Silver-Grey*).—Houdans are black and white; they weigh, hens about 7 lbs., cocks about 8 lbs., in good condition. They are excellent table fowls, and have white flesh. Bailly & Son, of Mount Street, are the best persons to apply to. We do not think the Poultry Company is in existence; it sold off last autumn, and this will account for your letters remaining unanswered.

EGGS NOT HATCHING (*Lancashire*).—There are three or four reasons why eggs should fail. They may be chilled, or the hens may sit hollow, or the eggs may be kept too dry. We cannot account for their dying at the age you mention. They are fruitful eggs; everything seems to go well at first. We must leave the solution to you, and you must discover why, when five nests are set all absolutely alike, four fail and one succeeds. No eggs can go on well that are kept too dry, and to this we attribute your failure. If your hens had all stolen their nests, they would have brought off all their chickens. Why? Because the hen would have left her nest every morning while the grass was covered with dew, and would have searched for food till every feather in her breast was running with water. In that state she would have returned to her eggs, wetting them thoroughly. You must do the same, and we believe you will succeed.

KEEPING POULTRY IN A DARK PLACE (*J. F. B.*).—You can keep Brahmas or Cochins in the place you describe, but you cannot rear chickens there. You must put them on the grass plot. The more you let your fowls run there the better. Cover the asphaltum as thickly as you can with sand, or, better still, road grit. It will pay you well by its value as manure. A dark place is, if anything, better than a light one for sitting.

SOFT EGGS (*G. P.*).—Your Houdans are probably too fat. Give them only ground oats and mashed potatoes for a week or two.

HEN OFF EGGS FOR A NIGHT (*Jack*).—As she had only sat upon them a few days we do not think her twelve-hours absence will prevent the eggs hatching.

DEAR'S POULTRY FOOD (*F. S. H.*).—We only know it from Mr. Jeffries' lecture. It was advertised in our last number.

DISEASED PIGEONS (*A. S.*).—Wing disease is one of the torments of Pigeon-fanciers. In mild cases, or rather in an early stage of the disease, it may be cured by applications of tincture of iodine, which will absorb the contents of the lump. It arises from scrofula, and is, therefore, hereditary. Attend to the digestion of your birds. "They do not fly out," explains much, but, being confined, do you give them loam and salt, also green food, as lettuce, cress, rape seed, all growing, or the lettuce with a brick laid on its root, for the birds like to pluck at what is fixed? Sometimes they like a feed of boiled potatoes, and to pick up crumbs of bread. Instead of the food you mention, give only peas for a time, for bad digestion comes of overfeeding, and wheat, hemp seed, and Indian corn may have suited them, and beans are too hot for diseased birds. "A FOREIGNER," who is a very experienced fancier, wrote on wing disease in our columns on the 30th of last July:—"As soon as I discover that a bird flies awkwardly I examine the joints of both wings, and, if I perceive any swelling, which is the beginning of the disease, I pluck out the ten long flight feathers of the wing affected, and by the time they grow again the bird will be perfectly free from disease, and will fly as usual. If the swelling is very bad, I pluck all the long feathers of the wing. If, on examination, I find the lump is like a bubble, I press the liquid out, cutting the skin. Many consider the plucking cruel, and so it is, but it is the only remedy, and the most certain of success—in fact, it will never fail." The lameness is another form of the disease. Put some new clean screws in the bird's water and keep them there. All Pigeons should by rights have freedom, or, at least, much room for exercise and great attention to condiments to correct digestion, and should not be overcrowded.

CANARY BREEDING (*C. A. J.*).—"A hen Canary will be ready to go to nest again in about ten days after deserting a nest of unfertile or added eggs. A breeding cage for Belgians does not differ from the ordinary one, but it should be very roomy, and placed rather above than below the level of the eye. You can purchase good Belgians for breeding this year of Mr. C. Hawkins, 6, Bear Street, Leicester Square. I have never bred from birds having confirmed asthma, but in 1867 I bred from a cock which, having been very incautiously exposed to draughts early in spring, had caught a severe cold, from which he never seemed to be entirely free. He was sent to me when almost at his last gasp to nurse, and on his recovery I purchased him, bred with him with great success all the season, and ultimately took a first prize with him at a very large All-England Show. None of his progeny exhibited any symptoms of asthma. Lizards and

Cinnamons are pure breeds, and are obtained in the usual way by pairing a Jonque and Mealy bird of either description.—W. A. BLAKSTON."

PAIRING A COCK WITH TWO HENS (*A Subscriber*).—"In reply to this query I will quote from a letter I have just received from the Cinnamon breeder to whom I referred a short time ago. He says:—'The way I managed mine was this. I paired the cock with one hen by keeping them in a small cage together for a few days. When the two appeared mated, I turned them and two other hens into a flight cage about 6 feet square; of course the cock put the hen he had first paired with to nest, and then the next forward, and so on. I found that, although he did his duty by the other two, he remained throughout the season most attached to the hen he had first paired with. My motive for pairing with one first is this: I find that unless I do so both or all three hens are apt to begin nesting together, all wish for the same nest-box, and as fast as one builds the others destroy the nest, and there is speedily a disturbance in the house.' This is from a thoroughly practical man, and the result of his mode of proceeding was forty young birds. I should hardly feel disposed to introduce the second hen if the first is sitting, though you will very soon see if it annoys her or not. The same treatment will apply in the case of the Linnet, but such is not the usual method of Mule-breeding. The Linnet will not be 'fresh' before May. The hen will most likely have a nest before then, but the eggs will not be fertile. It is a waste of time to introduce either a Goldfinch or Linnet early in the season, before they are in a condition for breeding, and I am sometimes astonished when I see sensible men do so for no other ostensible reason than the pleasure of seeing the birds duly paired and in their places. A hen so circumstanced will soon lay, and has the miserable satisfaction of sitting on a nest of barren eggs, which the breeder knows full well are so when she lays them. I have even known an intelligent man allow two Mules to pair, and permit the hen to sit out a nest of transparent eggs not larger than peas, with a hazy idea of something marvellous resulting.—W. A. BLAKSTON."

DISTINGUISHING THE SEX IN LARKS (*Idem*).—Macgillivray, our most observant ornithologist, says:—"The females are a little smaller, somewhat more slender, and in a faint degree less deeply coloured; the feathers of the head are also less elongated; but the differences are so slight that I am unable to distinguish a male from a female by any external character."

CANARIES WITH GOLDFINCHES (*A Very Old and Constant Reader*).—"You have been misinformed. It is by no means the usual practice in the North to pair a cock Canary with a hen Goldfinch. It has been done occasionally as an experiment, but that is all. Breeding Pied Mules is entirely a matter of chance—pure chance. What may be the natural laws which determine their production are matters far beyond our ken, and any intelligent Mule breeder will admit that at best it is groping in the dark—a lottery in which it is fabulous odds against your drawing a large prize. Some men believe there is a particular class or family of Canaries which will certainly produce marked Mules when paired with the Goldfinch; they call it the 'Marked Mule tribe.' I do not believe in anything of the kind, nor do I know of any method of breeding by which such a tendency can be induced. The only true muling hen is one which has produced a pied or a clean bird, and even then it is a very doubtful whether she will repeat the operation. Much might be written on the subject, but in the end it resolves itself into the same thing—what is understood as chance. Reading instruction in the mystery of breeding Pied Mules reminds me of an article in Delamere's 'Kitchen Garden,' on growing mushrooms. After an elaborate elucidation of the *modus operandi*, he says something to this effect:—that probably you will have a fine crop, equally probably none at all! So with Pied Mules. When I have solved the problem of 'squaring the circle,' I will calculate the chances of breeding a clean Mule, and publish the mathematical formula. I might, perhaps, introduce a patent Mule pill and Canary condition-ball at the same time!—W. A. BLAKSTON."

CANARIES NOT PAIRING (*S. J. L.*).—"Do not separate the birds, and furnish no more building material till the hen gives true evidences of an intention to build, which is not shown by her destroying and wasting the contents of the nest, but by carrying the stuff into the box, and scuffling about in it. Till she fairly begins to build she will only waste the stuff, and when it becomes soiled the greater portion is rejected. It is a great mistake to be too lavish in the supply of material, unless waste is no consideration. A little piece of moss, a small feather or two, will afford as much amusement as the whole contents of a nest-box. I have stated in previous papers that nest-boxes—i.e., *bona fide* wooden boxes, are not common in this district. I do not know anyone who uses them but myself, neither do I use them exclusively. I generally supply a box and material for the first nests, but when the season advances, bringing with it that abomination of abominations, the red bug, I am only too ready to sacrifice the pleasure derived from observing the building process, in favour of clean boxes, whether of wood, tin, potteryware, or wirework, lined with a fresh clean piece of felt. Let the bloodthirsty parasites come then as fast as they like; a clean nest every morning will be found the most effectual bar to their increase.—W. A. BLAKSTON."

REMOVING COCK CANARY FROM NESTLINGS (*Miss A. S.*).—"The cock may be removed at any time, but it is not prudent to do so unless the hen is feeding well, and you must notice whether his removal affects the hen in this respect. At first she will possibly appear restless, hopping about the cage and giving an unhappy sort of chirp, a wail after her missing lord; but the demands of her infant brood will soon overcome this, and she will very shortly nestle over them, and attend to their wants as assiduously as if the Divorce Court had not interposed its cruel hand. I apprehend you have a second mate for the cock; you can at any time replace him along with his first love, to whom he will remain attached with a constancy worthy of imitation.—W. A. BLAKSTON."

COMBS DISPLACED (*A. d'Allemant*).—Remedial measures should have been resorted to at once; we much fear that they may now be too late, as the brood is probably destroyed and the combs irreparably damaged by the bees gnawing away the cells. If, after examination, you should deem them not too far gone to render success hopeless, you had better obtain a frame hive, and after brushing the bees off the combs back into their own empty hive, convey them (the combs) in-doors, and fit them into frame, and induct the bees into their new domicile in the manner described in pages 88 and 90 of "The Gardeners' Almanack" for 1869. All artificial supports may be removed from the combs in a few days, or as soon as they are fixed by the bees.

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 8-14, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
8	Th	Meeting of Royal and Zoological Societies.	56.1	35.9	46.0	22	22	af 5	43	af 6	27	af 4	55	af 2	26	1	49
9	F	[8.30 P.M.]	55.1	35.5	45.3	21	21	5	44	6	50	4	58	3	27	1	32
10	S	Royal Horticultural Society, Promenade.	56.0	36.0	46.0	16	18	5	45	6	10	5	2	5	28	1	16
11	SUN	2 SUNDAY AFTER EASTER.	56.2	35.4	45.8	20	15	5	47	6	30	5	7	6	29	0	59
12	M	Meeting of Royal Geographical Society.	56.0	34.6	46.3	27	13	5	48	6	53	5	14	7	2	0	44
13	Tu		55.7	33.8	44.7	17	11	5	50	6	15	6	20	8	1	0	28
14	W	Meeting of Society of Arts and Royal Microscopical Society, 8 P.M.	57.0	36.4	46.7	17	9	5	52	6	39	6	28	9	2	0	13

From observations taken near London during the last forty-two years, the average day temperature of the week is 56.0°; and its night temperature 35.7°. The greatest heat was 75°, on the 10th, 1855; and the lowest cold 20°, on the 16th, 1860. The greatest fall of rain was 0.73 inch.

PLANTING A FRUIT GARDEN.



I HAVE not seen the subject of a proper succession of fruit trees discussed in your columns. I planted the greater part of the trees in my own garden eight or ten years ago, and I find now that I should have been greatly benefited by some judicious advice on this subject; and although I have been for some years endeavouring to correct my errors by removing or re-grafting superfluous trees, and introducing more desirable kinds, yet I

must confess that my garden is still most imperfect, and unequal in the supply that it affords. When I enter other gardens, where the matter is scarcely studied at all, I find it commonly the case, that there is an *embarras de richesses* at certain times of the year, ill-balanced by an absolute dearth at others, an abundance of fruit comparatively worthless, while the worthier kinds are not even known by name. Being therefore still imperfectly acquainted with the best kinds of fruit, and asking information of others, I will, with your permission, describe the best way, to my knowledge, of stocking a moderate-sized garden, feeling quite sure that others will widely differ from me, and that if some of them will take the trouble to give their views on the subject, we may arrive at some approximation to the truth.

But this is a matter where everything will depend on the size of the garden. Let us take, then, a garden of such dimensions as to be manageable by an active man, with the help of a boy, or the assistance at busy times of an extra man for a day's digging. Let it be a walled garden, and have an orchard house. It may or may not have a heated vinery or ground vineries; for Grapes will not enter into the present discussion.

First, then, for the walls. On these I would grow hardly any Plums, only one Green Gage (Transparent Gage is said to be the best), for high flavour, and one Coe's Golden Drop for its lateness; but it needs a warm corner to ripen well. There are, I am well aware, many excellent Plums, but they are not so good as Peaches, and I should, therefore, prefer to have them elsewhere: where, I will show presently. If, however, there happen to be a fancy for Plums and a wish to develop the higher flavour which a wall will undoubtedly impart to them, then I would plant a few trees as diagonal cordons against the wall, by themselves, at 18 inches apart, selecting choice kinds, say, in the order of ripening, Early Favourite, De Montfort, McLaughlin's Gage, beautiful and fragrant, Kirke's, Reine Claude de Bavay, Fulton, and Impératrice.

Of the remaining wall space I would devote three parts to Peaches and Nectarines and one part to Pears. Pears grown on walls, south of the Treut, are not generally superior to those grown on standards, except in size. I do not know, therefore, that I should admit any to my precious wall space but that I believe there are certain kinds which may be improved by this treatment. Everyone knows how rare it is to meet with a good Pear after January; but I have sometimes found these late kinds,

commonly so hard and flavourless, acquiring on a wall a flavour which they cannot obtain elsewhere. Beurré Sterckmans, for instance, has been this winter delicious and juicy from a wall. I should like to know whether the experience of others confirms this; and I will at the same time ask those who have proved them, to name what they consider the best spring Pears. The only good ones I know are Easter Beurré, which ripened this year at Christmas; Bergamotte Esperen with a Beurré texture, but a weak tree on a light soil; and Beurré de Rance, which is not at all Beurré, but sweet and juicy, and ripe now, on the 25th of March.

These late Pears, if I have any, are the only ones I would admit to my wall. They must be small trees, and therefore on the Quince. In fact, a Pear on a Pear stock, with huge branches, as one sometimes sees them, occupying the space of three Peach trees, for many years bearing nothing, and then no fruit except at the extremities, ought never to be seen against a wall, nor indeed inside a walled garden. On the Quince they come into bearing at once, are very fruitful, and may easily be confined within a limited space. They should not occupy more than 4 feet of wall, which space the trees sold by nurserymen as pyramids, after one side has been cut off, may be easily trained to cover.

The Peach trees on the wall, alternating with these Pear trees, I will suppose to occupy 12 feet to every 4 feet allotted to a Pear, and to be fan-trained, let us hope with their lower branches well developed in their youth, and if possible bent upwards in the French fashion after they have reached their full horizontal extent, so as to run some way up the wall, and maintain their vigour; and on the wall, with the exception perhaps of one early Peach, I would have none but the noble midseason Peaches, reserving the later kinds for the dry atmosphere of the orchard house—such kinds as Bellegarde or Galande, and Royal George, varied with the paler Noblesse, and for Nectarines Violette Hâtive and Elruge, the latter so fruitful and so pruneable.

And now for the orchard house, which by the way should be a span-roof, for in the south of England it is a waste of good wall space to have an orchard house leaning against a wall. It, like the walls, should be kept for the most valuable trees—grow nothing in it which will do fairly outside. Peaches and Nectarines should be its main crop, followed, perhaps, by one or two of those late Plums which will ripen admirably here, and hang uninjured till they shrivel into concentrated sweetness; such are Impératrice, Coe's Golden Drop, Fellenberg, and Norbert. But while the main crop of the orchard house is of Peaches, these Peaches should be exceptional ones, exceptional either for their earliness, for they will ripen here a little earlier than on a wall, or for their lateness, for they will be safer here than on a wall, or for their singularity, for there are kinds of which one is glad to possess a specimen of moderate size, although one cannot afford space for a large tree.

Let us suppose the house to hold thirty Peach trees, then let five be of the earlier kinds, intended to be eaten

before the wall crop ripeus, and these I should choose from among the early Peaches raised by Mr. Rivers, several of which are said to ripen early in July, though I have not myself yet fruited them. Let fifteen be of the later kinds, among which should be found Walburton Admirable, Raymacker, somewhat like the preceding; Stump the World, an American variety, large and handsome; Gregory's Late Peach, good; and Rivers' Comet, one of the latest worth eating. Its parent the Salway (not Salway, as people spell it), which ripens a fortnight later, is handsome enough for a dish, but its lovely colour is not seen by candlelight, and I never found it worth eating. It cannot vie with an October Pear. The Prince of Wales and Lord Palmerston are highly spoken of, but I have not yet tasted them. Among the characteristic kinds, the curiosities, if one may so call them, of Peach culture, I should not like to have a house without the fair-skinned Malta, with its noble flowers, the best Peach for sending by railway to a friend, or the Grosse Mignonne, the plump darling, one of the choicest of Peaches, but said to be rather delicate against a wall. Some of the yellow Peaches, too, should be there—Canary, a very distinct kind; Golden Bathripe, early; and Exquisite, all handsome fruit; but these American Peaches, though good, are by no means equal in flavour to the old English kinds. The Honey Peach, a Chinese variety, should not be omitted; then the White Nectarine is doubly vicious in the orchard house; Rivers' Orange, with good flavour, is worth growing for its looks alone, whether it be decked with its eye-like blossoms or hung with golden fruit; add Pine Apple, recommended as one of the best; and last, not least, either in merit or in size, Victoria, which needs and deserves the warmest corner one can give it.

You will say, that neither against the wall nor in the house have I planted an Apricot. Well, I must own that I do not care for Apricots much; but if some are wanted for preserving, plant the Royal against your stable wall, where the hard-beaten soil will suit it admirably; if for eating, then add a brace of Peach Apricots to the orchard house, and learn how superior they are, when ripened through and through, to any that have been grown upon a wall. If you must have more, then grow one or two short-jointed Kaishas, which do well in this way, among the Plums, in oblique cordon.

And now for the Pears; but before the kinds are named, let it be stated where they shall be grown. An 8 or 9-foot border, between the wall and the path, will yield plenty of space for a row of dwarf trees on the Quince, which, if allowed to run 6 feet high and no more, will cast no shadow in summer on the ripening wall fruit, and will leave room for one row of Peas or winter Broccoli between themselves and the wall, at 3 feet distance from the latter; and if you would have good Peaches, let that 3 feet be a sacred spot on which the edge of spade never trenches, beaten as hard as you please by the feet of fruit-eater and fruit-pruner, but never disturbed, never dressed with anything but a summer mulching. If it be asked, Why not plant the Pear trees elsewhere in the garden? I answer that a 10-foot garden wall will often make the difference of two or three degrees of frost, sufficient to save or ruin the blossom in spring, to trees that are even 6 feet from it; and the choice Pears, almost all natives of a warmer climate, are sadly exposed to injury from the early development of their bloom. For the kinds, few people care to taste Pears during the height of the Peach season. Let Williams's Bon Chrétien ("Ripe Williams") they call them in the London streets), be the first; Beurré d'Amanlis and Beurré Superfin follow close upon this. One of each is sufficient. But October, November, December are the season for melting Pears. If you have room for fifty trees, plant two of each of these—Louise Bonne, Beurré Hardy, Marie Louise, Gansel's Bergamot, Huyshe's Victoria and Prince of Wales, Glou Morceau, Doyenné du Comice, Alexandre Lambré, and Zéphirin Grégoire, a most abundant bearer, if not so aromatic as some others. Of midwinter Pears—Winter Nelis, Beurré d'Arenberg, and Joséphine de Malines, I would plant six of each, with one or two of the still later kinds, recommended for the wall.

Plums I would grow the same way as Pears, on bushes or pyramids 6 feet high. If you please, let them run along the other side of the before-mentioned garden walk, and a very pretty walk it will be with or without a dwarf Tea Rose, or some choice plant, between each pair of fruit trees. Let the Plums there alternate with Pears; for one in three would be a fair proportion between Plums and Pears. It should be remembered, too, that this fruit is more valuable for culinary purposes than for dessert, and twice the number of trees should

be planted for the kitchen; of these, Early Prolific (July), Victoria (August), Autumn Compôte (September), Diamond (September), Autumn Beauty (October), are among the best. Dessert Plums have already been named. If there is no orchard, one standard Damson among the Currant bushes will be given.

There is one fruit remaining which must not be overlooked, and that is the Apple, and in selecting from the innumerable varieties that are offered, it must be borne in mind that one Apple that is sound in March is worth twelve that are ripe in October. Who would eat an Apple when he can have a Pear? The merit of the Apple is that it will keep to a season when all other fruit, even Pears, are gone or worthless. One or two sweet summer Apples, like the Irish Peach and Devonshire Quarrenden, may be planted, and a few more autumn and winter pudding Apples, such as the Blenheim Pippin but let the main stock be for the spring. And here, again, I shall be glad of information, premising that Ribston Pippins and Brandy Apples may be all very well for those who have the iron digestion of a child, but that to my mind an Apple which will carry through the exhausting winter months its brisk and juicy freshness untamed, and remind you of summer fruit in the dry month of April, is worth all the engary leather in the world. Of such Apples, late-keeping, keen, crisp, juicy, and digestible, I know but few. Dumelow's Seedling is the best; the London Pippin and Gooseberry Apple are good; the American Apples are light enough, but grown in England lack flavour. Of these Northern Spy is not bad, but the famous Newtown is not better than its parent, the London Pippin. I should be thankful to any one who would recommend some other Apples of this character.

Apples should be grown in an orchard, where they can. The pretty pyramids on the Paradise give much more trouble and no better fruit than standards, which take care of themselves, and bear ten times the crop; and as for the horizontal cordons not long ago so highly recommended in the *Times*, experience has taught me that they require endless attention, and yield little for it. The warmth of a walled garden had better be reserved for Pears and Plums; but if Apples must be grown in it, let them be on large bushes, so that no other crop can be grown beneath the tree, and its roots may remain undestroyed by the spade.

By some arrangement of this kind, the different kinds of fruit may be made to supplement one another. Pears are not grown which ripen when there are more Peaches than can be eaten. The Peach season is prolonged by means of the orchard house to the end of September. The Pears chosen offer a succession during what may be termed the four months of the Pear season. An endeavour is made to prolong this into spring, and when all other fruits fail, there will still be some juicy Apples left to fall back upon.

In return, let me solicit some of your more experienced correspondents—1, To name such Apples as I have described. 2, The best late Pears they have proved. 3, To say whether I am right in the observation, that late spring Pears derive from walls a mellowness and flavour which earlier kinds do not.—WYESIDE.

NOTES ON SOME OF THE GOLDEN TRICOLOR PELARGONIUMS.

I do not pretend at all to review the large number of these very beautiful plants. Beautiful they all are, and specially beautiful in the greenhouse; for although they make, some of them at least, a good display as bedding plants, yet I question whether in this they are not eclipsed by some of those Bicolors which have of late years been raised. However, having had several of them under my own eye, and seen others, I would—it may be for the guidance of some of your readers—record my opinion of them.

There were originally two distinct types of these Golden Tricolors; and we may, I think, from whatever source the varieties have come, still see this distinction prevailing. There is the flat, smooth, and deeply indented foliage of Sunset, and the soft, downy, and semi-reflexed foliage of Mrs. Pollock. Both of these are very pretty, and it would be hard to say which of them is the more attractive—whether, for example, Lucy Grieve, which I take to represent the Mrs. Pollock section, or Sophia Dumaresque is the more beautiful. Each will have its champions, and so we must leave their several admirers to sing their praises; be it mine to hold the even balance, and

to record simply my opinion, being, in fact, in the position of the negro—"Caesar and Pompey very much like, specially Pompey."

Lucy Grievé.—One of the very brightest of the whole class. It has not proved itself as yet to be very vigorous. I say as yet, for I am inclined to think that many of these plants do most decidedly improve in habit with years. Mrs. Pollock was not nearly so vigorous when it first came out as it is now, and Lucy Grievé, I think, improves.

Lady Cullum.—A splendid variety, vigorous and bold. The colour is very bright and there is plenty of it. It does not, however, run in those even zones that we are bound to look for; still it is one of the most effective sorts in general cultivation.

Countess of Craven (Perkins).—An improvement on Queen Victoria of the same raisers. This variety has a peculiar softness and velvety appearance, which make it very attractive.

Louisa Smith (F. & A. Smith).—A fine bold plant, with perhaps not so much colour as might be wished, but very vigorous, and good either as a pot plant or bedder.

Sophia Cusack (E. G. Henderson & Co.).—A very effective variety. Colours of the leaves very bright.

Sophia Dumaresque (E. G. Henderson & Co.).—A plant in the style of Sunset, and while a great improvement on it, is at the same time very effective out of doors.

Star of India (Rollisson).—One of the very best we have. It is another of the Sunset section. The foliage is very flat, and the colours in it very brilliant. It is a very good grower, and the appearance of the plant is admirable. It is to my mind far in advance of any in this flat-leaved section.

Miss Watson (Watson).—A wonderfully overrated variety. As yet I have seen nothing in it to merit the praises bestowed on it. It is poor in growth, and its colours by no means so bright as those of many others.

L'Empereur (F. & A. Smith).—A very pretty coloured variety, and of good habit of growth; the markings somewhat in the way of Sophia Dumaresque, which it considerably resembles.

Prince of Wales (F. & A. Smith).—A prettily coloured plant, but having in it nothing very remarkable.

Queen Victoria (Perkins).—A good grower, and the foliage pretty, but excelled by the Countess of Craven noticed above.

There are many others in cultivation, I am aware, but these have come more immediately under my notice, and I therefore give my notes on them for what they are worth. There are many coming out—Achievement (Turner), Moonstone (Rollisson), Jetty Lacy, Lord Derby, &c. (F. & A. Smith), which will perhaps drive some of the above out, but they will be high-priced for a time.—D., Deal.

SETTING GRAPES.

Mr. Simpson's remarks in the Journal of March 25th are well worth notice; but your readers will not, perhaps, understand whether, when he speaks of leaving the young shoots of Vines untied till after the bloom has set, he means that the rods should be left tied back—i.e., with the points downwards, as they commonly are before starting, to make the sap rise more evenly, or whether he refers only to the young shoots being untied, the rods being placed in their proper bearing positions. Tight tying might stop the proper flow of sap and cause a bunch to set badly, but loose tying just to keep a shoot away from the glass, and the excessive moisture which would lodge upon the foliage, can hardly, one would imagine, be the cause.

Mr. Thomson, in his admirable "Treatise on the Vine," says, page 39, that fire heat at night 75°, and 85° by day, with no moisture given while they are in bloom, is the whole secret of setting Muscats; but if, as Mr. Simpson says, "bad setting at any time is the result of weakness," the amount of heat is not the only thing that has to do with it. The probability is, that while several conditions are essential to make Muscats set properly, one of them wanting will make the setting go all wrong.

I have been rather puzzled with three young Muscats of Alexandria of my own this year. They are planted inside and trained on the back wall of a lean-to, and this wall is flued and in parts quite hot to the hand. Now, I notice that wherever the bunch has touched the hot wall, the berries have uniformly set well and grown rapidly, while the parts of the bunch that project from the wall, though only 2 or 3 inches from it, have set very indifferently. The upper shoulders of all the bunches are good, but the tips of some and main stalks of others are

more or less faulty. Now, in my case, I attribute this to giving a little too much water before the Vines came into flower, for, having been quite dust dry through the autumn, I gave them a good soaking when started in January, and while they were breaking. This excess of water caused them to produce an excess of sap, which exuded, as it often does, in globules all over the young shoots and bunches. Now, where the bunches touched the hot wall I think this excessive sap was dried up, at all events there was comparatively little to be seen, but the other parts of the bunch were sparkling with globules, and this plethoric state, I think, prevented the flowers from setting. I do not think the temperature of the house was ever too low or too damp, for all the other Grapes have set to a berry, and I think the cause I have mentioned must be the true one, but I should like a better opinion upon it. I should mention that the roof of the lean-to is covered with Vines which very much shade the Muscats on the back wall, but curiously the bunches near the bottom that are most shaded have set best, and the finest and most vigorous-looking bunches (from, as I think, their excess of sap), worst. I think, also, that ago has something to do with it, for the Vines are quite young, only planted two years, and as with the animal, so with the vegetable world, very young and plethoric, or, I should say, sappy parents, are not the sort to have vigorous offspring.

Mr. Simpson concludes his remarks by saying that he would be glad to know if others have observed that the untied shoots set earlier and better than the tied ones. I can only say that I seldom tie mine more than I can help, but I have looked over them without being able to see any difference. Heat seems to me the chief cause for one bunch setting earlier than another. On my flued wall some bunches are nearly half grown, while others on the same Vine are only just coming into flower.—H. NICHOLLS, M.A., F.R.H.S.

I THINK the remedy prescribed by Mr. Simpson for bad-setting Grapes is, so far as its influence extends, a very good one. I have noticed the same thing myself, and I quite agree with the system, because it is a very natural way of inducing the Vine to set its own fruit, and if practised upon weakly-growing Vines it is an excellent way of obtaining increased strength in the shoots and bunches before passing through the blooming stage. I am afraid, however, that it would not be practicable in very many cases, at least not to the extent Mr. Simpson states, unless the Vines were trained much farther from the glass than is the case in most vineries, because the tendency of the shoots to grow erect would bring the tender foliage in contact with the glass long before the bunches came into bloom; there they would be exceedingly liable to irreparable injury from burning, and other calamities would follow, rendering the perfection of the crop very doubtful. I do not state the above for the purpose of discouraging any one who may wish to try the experiment; on the contrary, I state it solely for the guidance of those who might adopt Mr. Simpson's plan without a thought as to consequences.

My Vines are trained 16 inches from the glass, and I allow the shoots to grow unfettered by tying until the bunches stand out boldly from the joint; by that time the foliage is quite as near the glass as is desirable, and after being stopped the shoot is pulled down a trifle. This operation is performed at intervals, taking care that the shoot is not finally tied down to the wires until after the fruit is swelling-off. By this practice the bunches bloom and set their fruit at a considerable elevation from the main rod.—THOMAS RECORD, Lillesden, Hawkhurst.

TUBULAR BOILERS.

I do not pretend to the varied experience of your correspondent in your paper dated March 25th, on the subject of boilers, but as he condemns in such a wholesale manner all tubular boilers, I think it is only fair to point out one that I find in use both efficient and economical.

One thing in connection with boilers and the heating of houses is, I think, often lost sight of—viz., the labour and the attention required, often calling the gardener from his work, and necessitating night attendance, &c. Now the boiler I am using I obtained from Mr. Marriott, of St. Neots; he calls it his "improved self-regulating tubular boiler." The size I have cost me £16 10s. It is self-contained, requiring no brickwork, and I find that it will hold a charge of 1½ bushel of coke, and that this will last twenty hours and heat from 700 to 900 feet of 4-inch pipe, though I am now only using the boiler for about

400 feet. With us the cheapest coal is not less than 18s. per ton, and if I can heat my houses at a cost of 6d. for twenty hours, and at so little cost of time and attention, the system does not merit the wholesale condemnation I have alluded to. My gardener seems perfectly satisfied with it, and I therefore mention it as at least being worthy of consideration.—J. E. BARTLETT.

SUBTROPICAL PLANTS.

(Concluded from page 231.)

[The following half-hardy Perennials should have preceded that which commences the list given last week.]

**ACACIA LOPHANTHA*.—Foliage graceful and elegant, growing erect. It is a greenhouse evergreen shrub. The seeds are slow of germination, therefore soak them in water at 120° for about six hours, then sow in sandy peat soil, and place in a brisk bottom heat of from 70° to 75° or even 80°. When the plants are well up keep them near the glass, and give a moderate amount of air, potting-off singly, and forwarding in the hotbed until established; then harden them off, and afford a light and airy position in the greenhouse, shifting them as often as the pots become full of roots into pots a size larger. Continue this treatment up to October, keeping the plants well supplied with water up to that time, but after that, and during the winter, keep them dry, but the foliage must not be allowed to flag from want of water. A compost of two parts peat and one part loam, with a free admixture of sharp sand, will grow them well, good drainage being provided. In March of the second year the plants should be encouraged with an increase of heat and moisture to make a vigorous growth, and be fresh-potted as may be necessary. The compost used may be two parts sandy fibrous loam from turf, and one part sandy fibrous peat, with a free admixture of sharp sand, which is more suitable after the plants become established. They should be well hardened off before being planted out, which they may be early in June. Take them up again at the end of September or before frost, and winter them in a greenhouse from which frost is excluded. They are desirable for the centres of large beds, and for the back parts of borders. Height 6 feet.

ARUTILON DUC DE MALAKOFF.—Foliage large, hairy, with a crimson hue, very ornamental. Flowers cream-coloured, veined and striped with crimson. The seeds should be sown and treated as recommended for *Acacia lophantha*; but it is not necessary to steep them, and the soil should be kept dry in winter and in spring. Cut the plants down to within 6 inches of the soil, encouraging growth with a brisk heat, and planting out in June. Height from 5 to 6 feet.

**ARALIA PAPYRIFERA*.—Foliage large and handsome; growth free and compact. It requires a good rich soil, and should be sown early in March in a compost of two parts turfy loam and one part peat. After sowing place the seeds in a hotbed, and grow the plants there until they are well established, then harden off and remove them to the greenhouse, affording a light and airy position. By the second year the plants will be large enough to plant out, which may be done in June, choosing rich well-trenched soil, and supplying well with water in dry weather. It attains a height of 4 feet, and is fine for groups and masses. It needs to be taken up before frost, and to be wintered in a greenhouse.

ANDROPOGON ROMBYCINUS.—Ornamental Grass. Flower-heads drooping and silvery, having a fine appearance. Sow in light soil, pot-off, grow on in a frame in summer, and winter in a greenhouse.

ARUNDO DONAX.—A splendid Grass, attaining a height of 6 feet, and 10 feet in sheltered situations. Its seeds should be sown in gentle heat, the seedlings potted-off when large enough to handle, and grown in a pit, in which the plant may be wintered, protection being given from frost, and the pots plunged to the rim in coal ashes. It should have a sheltered and warm situation.

A. VERSICOLOR.—This is very effective, having a broad stripe along the centre of each leaf. It is best treated as a greenhouse plant, planting it out in June, and taking it up in October. The soil should be light, rich, and deep, and a warm situation given, otherwise it does not succeed well. 4 feet.

**BOCCONIA CORDATA ROTUNDIFOLIA*, *B. FRUTESCENS*, and *B. JAPONICA*.—Large, grey or silvery leaves; habit robust but compact. These plants very much resemble *Lomatia*. Fine for specimens on lawns or in groups. Height 3 to 5 feet. For treatment, see *Aralia*.

**CANNAS*.—*C. Annei*, orange; glaucous foliage, orange flowers;

5 feet. **C. Annei superba*, dark purple foliage, salmon flowers; 5 feet. *C. discolor floribunda*, foliage green, veined purple; flowers red and yellow; 5 to 6 feet. *C. gigantea major*, foliage green, flowers scarlet; 6 feet. *C. grandiflora floribunda*, foliage dark green with a purple tint, flowers red; 4 feet. *C. hybrida Warscewiczoides*, foliage veined, flowers red; 4 feet. **C. Krelagei discolor*, foliage purplish, red flowers; 4 to 5 feet. **C. metallica*, foliage bronzed, dark; flowers crimson; 4 feet. **C. muscifolia*, foliage green, large and fine; flowers red; 4 to 5 feet. *C. rotundifolia rubra*, foliage dark purple, flowers scarlet; 5 to 6 feet. **C. Rendatleri*, bronzy foliage, orange flowers; 4 to 5 feet. *C. Warscewiczii*, foliage green, flowers blood red; 3 feet. *C. Warscewiczoides grandiflora*, foliage green, flowers dark red; 3 feet. **C. zebrina*, foliage striped violet purple, fine; flowers scarlet; 5 feet.

The above are stately ornamental-foliaged plants, which require to be planted in sheltered situations, as the foliage is large, and tears in all forms when exposed to wind. The seeds should be sown from February to April, previously soaking them in water at 125° for ten or twelve hours. For sowing use a good, rich, sandy soil, and afterwards place in a hotbed of from 70° to 75°, and when the seedlings have two leaves pot them off singly in a compost of two parts light turfy loam and one part fibrous peat or leaf mould, with a free admixture of sharp sand. Continue the plants in a hotbed, potting as required, and at the end of May harden well off, and plant out in June. They should have a bed of deep, rich, light soil, well drained, and enriched with leaf mould or old rotten manure. They should be well supplied with water in dry weather, and the ground in which they are planted may be mulched with cocoa refuse dust or old rotten manure. In autumn the plants should be taken up before frost and potted, placing them in a light airy house; and when the foliage decays they may be removed to a cool dry place until February or March, when, if placed in a hotbed of 70°, they will start into fresh growth; being encouraged with a good supply of water and a moist atmosphere, they will become strong by the middle or end of May, when they should be well hardened-off, and they should be planted out at the beginning of June. It is a common practice to leave the plants in the open ground until cut off by frost, and then store the roots away as *Dahlia* tubers are. This plan answers tolerably well; but the growth not being perfected, though the tubers start freely in the following year, the plants are not equal to those that are taken up, potted, and placed in a light airy house, where they not unfrequently continue to expand their blossoms for some time if supplied with water throughout October; then gradually discontinue watering, so as to have the plants thoroughly dried off by the beginning of December, when they should be kept cool and dry until the beginning of March. They should then be fresh-potted and forwarded in a hotbed until of good size, and be hardened well off and planted out in June. In some warm sheltered spots, and in sandy gravelly soil where water does not lodge in the subsoil, the roots may be left in the ground during the winter, mulching them in October with about 3 inches thick of half-decayed leaves, and after the stems are cut off by frost they should be cleared away, and a covering of litter placed over the beds before severe frosts set in. In March the litter should be removed, and the bed pointed over with a fork, not going so deeply as to injure the plants.

CENTAUREA BABYLONICA.—Foliage large and silvery, handsome. Height, 3 to 4 feet. Flowers yellow.

C. CANDIDISSIMA.—Silvery foliage; well known. 1 foot.

C. FENZLII.—Foliage large, glaucous green; flowers pale yellow. 3 feet.

C. GYMNOCARPA.—Foliage silvery, graceful. 1½ foot.

These are the finest of all the silver-foliaged plants, and fine either for beds or borders. The seeds should be sown in March in a compost of two parts fibrous light loam, and one part sandy peat, with a free admixture of silver sand, placing them in a hotbed. When the plants have two rough leaves pot off singly in small pots, and forward in the hotbed until well established; then well harden the plants, and remove them to a cold frame, potting as required up to October. Afterwards place on an airy shelf in the greenhouse, giving no more water in winter than enough to keep the foliage from flagging. In spring encourage with a slight increase of heat, and shift as the pots become filled with roots, harden well off in May, and plant out in June. The plants should be taken up before frost, potted, and wintered in a light airy greenhouse, keeping them dry over the winter, but not so much so as to cause the shrivelling of the stems and foliage.

CHAMÆPESCE CASSANDRAE.—Foliage bright green, spiny, beautiful; 2 to 4 feet.

C. DIACANTHA.—Foliage white, spiny; 2 feet.

These biennials have a fine appearance, their spiny foliage being very handsome. The seed should be sown in May in a gentle heat, in a compost of two parts turfy loam and one part leaf mould, freely mixed with sand. The plants when large enough to handle should be potted off singly, and as often as the pots fill with roots repot up to October, and then remove to a cool house, keeping rather dry during the winter. They may be wintered in a cold pit, the pots being plunged to the rim in coal ashes, and protected from frost by a covering of mats over the lights. Plant out in May.

ERYTHRINA CRISTA-GALLI (Coral tree).—Foliage shining and handsome; flowers crimson scarlet, produced in racemes from the axils of the leaves. The seeds ought to be sown early in March singly in small pots, in a compost of two-thirds loam, and the remaining third equal parts sandy peat and leaf mould, with a free admixture of sand. Place the pots in a bottom heat of from 70° to 75°. Keep the soil moist but not very wet, and near the glass. Admit air freely after the seedlings appear; and when the pots are full of roots shift into pots a size larger, and continue in the hotbed until established, taking out the points of the shoots when the plants are about 6 inches high, shortening them to two or at the most three joints. When the plants are well established remove them to a light and airy position in the greenhouse, repotting them as required until August, then gradually reduce the supply of water, and in October discontinue it altogether, keeping them cool and dry during the winter, but safe from frost. In March cut them down to within two eyes of the base of each shoot, and place them in a house where there is a gentle heat, and when they have shoots 2 inches long shake the plant out of the pot, repot in the same size of pot, and keep close, moist, and shaded until it has recovered from the potting; then expose fully to light and admit air freely, keeping near the glass so as to have the plant dwarf. Plant out in June in rich soil in an open situation, and in dry weather keep the plants well supplied with water, and syringe freely overhead. Take them up before severe weather, pot, and keep them in a place secure from frost over the winter, dry, but not so much so as to cause the lower part of the shoots to shrivel.—G. ABBEY.

ROYAL HORTICULTURAL SOCIETY.

APRIL 6TH.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Calver, gardener to Sir H. Cotterell, Garmons, sent a bunch of Lady Downe's Seedling Grape, which had been very well kept. Mr. Calver's object in sending the bunch was to compare it with some of the other and newer late varieties, but as no others were exhibited the comparison could not be made. Messrs. Maule & Son, of Bristol, sent a dish of a beautiful, small, conical Apple, called Easter Beauty, which will, doubtless, form an ornament in the dessert, but its texture and the flavour of the flesh were such as not to recommend it for use. Mr. J. A. Franklin, of Hampstead, sent a dish of what was supposed to be a seedling Apple, which in the opinion of the Committee was Hoary Morning. Mr. T. Lockie, Court Gardens, Great Marlow, sent very handsome specimens of Reimette du Canada, grown in 10-inch pots, to which a special certificate was unanimously awarded for the skilful culture. Mrs. Blackett Ord, of Whitfield Hall, Haydon Bridge, sent two specimens of a seedling Apple, raised from seed of a French Apple, of very large size, and angular like the Catshead or Kentish Codlin, sound, and of excellent flavour. It was commended by the Committee, and a request was made that Mrs. Ord would send it again another season. Mr. George Beech, Castle Ashby, sent a seedling Apple, the texture and flavour of which were such as not to recommend it. Mr. G. Craddock, gardener to Lord Willoughby de Broke, Compton Verney, sent a fine specimen of Shaddock, and two large fruit of the Seville Orange, remarkably well grown. They were grown on the back wall of a vinery under the shade of Vines.

Prizes were offered at this meeting for collections of Cucumbers. In Class 1, for a brace of White-spined Cucumber, there were five exhibitors. Mr. Lockie, the Court Garden, Great Marlow, sent Berkshire Challenge, a brace of very handsome Cucumbers, receiving the first prize, and the second was awarded to Mr. Godfrey, gardener to J. Anderson, Esq., Ankerwyke, Wraybury, for Anderson's Perfection. In the class for Black Spines there were no exhibitors. In Class 3, for Smooth Cucumbers, there were three exhibitors. The first prize was awarded to Telegraph Improved, exhibited by Mr. Gilbert, Burghley House Gardens, Stamford. No other dish was considered worthy of a prize. In the class for "Any variety," Mr. Lockie exhibited six remarkably handsome fruit of Blue Gown, obtained by crossing Turner's Favorite and Telegraph. They measured 22 inches, and

were awarded the first prize, and the second was awarded to Mr. Godfrey, for six fruit of Anderson's Perfection.

Mr. Cadger, of Laton Hoo Park, sent a dish of Prince of Wales Potato.

FLORAL COMMITTEE.—Rev. J. Dix in the chair. The weather was unfortunately wet, the rain never ceasing the whole day, and the Fellows who usually support these meetings were deprived of the opportunity of admiring an exceedingly interesting exhibition. Mr. William Paul's Roses alone were worth a long journey to see and admire; the Orchids, also, were very numerous. Mr. J. Dubson, of Isleworth, sent several seedling Cinerarias; with the exception of a white flower, Princess Teck, there was none in advance of flowers already sent out. This novelty was too coarse and irregular to merit any distinction. Mr. Badman, nurseryman, Gravesend, exhibited several small plants of Zonal Pelargonium Harbinger, a large brilliant scarlet flower, very showy, but deficient in outline and compactness of truss. There are hundreds of seedlings of equal merit. Messrs. Rollison, Tooting, sent a collection of plants which was awarded a special certificate; among them were some small specimens of fine varieties of Camellias, and several Palms. Mr. Sherratt, gardener to James Bateman, Esq., Kuypersley, brought out specimens of Rhododendron Batemanni, one of the Bhotan kinds, of a very dark purplish rose, but quite delicate in constitution. Mr. Fairbairn, Acton Green, exhibited specimens of a seedling Cineraria named Floribunda. This was wide of the mark in every possible way.

Mr. Ball exhibited *Oncidium nobigenum*, which was awarded a second-class certificate; *Ficus elmeria*—first-class certificate—a plant useful for its foliage in subtropical gardens; *Colusa Princess Louise*, and *Colusa Alexandra*, not equal to the *Coluses* lately introduced. Among other plants from Mr. Bull, were *Sophranitis grandiflora*, *Cymbidium eburneum*, *Streitzia grandiflora*, *Gloxinia Conquest*, and *Econymus japonicus aureus*.

Messrs. Lee, Hammersmith, sent a collection of *Cephalotaxus*, proving these plants to be monocious in some cases. Mr. Williams, Holloway, exhibited a fine collection of Orchids, which was awarded a special certificate; among them were some very interesting specimens; also a collection of greenhouse plants which received a special certificate. Among the Orchids were two species of *Calogyne*; one was recognised by Mr. Bateman as *C. oculata*. Mr. Williams also sent a plant of *Primula sinensis magnifica*, a white fringed flower, but not of so pure a white as some previously exhibited.

Messrs. Smith, Dulwich, sent a very neat collection of plants, among them some of their beautiful Tricolor Zonal Pelargoniums in fine condition; also a collection of seedling Cinerarias. *Orh of Day* is of very superior quality, indeed a great advance in this flower, dark crimson flowers beautifully marked by a white centro and disk; this, with the seedling Royal Purple, is by far the best Cineraria of the season. This new strain, which may be named Tricolor, promises to produce a new feature in these useful spring decorative plants. Messrs. Smith sent in addition *Azalea Advancer*, a very fine flower of rosy tint, good in form, but the plant out of condition—probably this may at some future day take a good position; and *Azalea Nimrod*, of no particular merit. A special certificate was awarded the collection.

Mr. Wm. Paul sent a very splendid collection of pot Roses, which deservedly claimed a special certificate. Among them there was a new perpetual climber, *Prince Leopold*, but not in condition to require any special notice, however good it may prove in its proper season. Mr. W. Paul also exhibited two plants of a new *Hyacinth* called *Sonora*; full spikes, but colour a pale buff, not sufficiently distinct.

Mr. Wilson, gardener to W. Marshall, Esq., sent out specimens of beautiful Orchids. Messrs. Veitch exhibited a fine collection of stove plants, which was awarded a special certificate. Among them were *Azalea James Veitch*, *Gesnera macrantha*, *Rhododendron Brookeanum*, a beautiful plant with bright yellow flowers—first-class certificate; *Cymbidium tigrinum*—second-class certificate; *Thrixspermum luniferum*, *Oncidium encallatum*, and others.

Mr. Green, gardener to W. W. Saunders, Esq., was awarded a first-class certificate for a new *Agave De Smetiana*, two curious terrestrial Orchids, and fine specimens of *Hypocyrta brevicalyx*, known also as *Gloxinia hypocyrtiflora*. Messrs. Paul & Son sent seedling *Camellia Glory of Cheshunt*, almost identical with *C. Valtevaredo*.

Mr. Turner, Slough, received a special certificate for a neat group of plants, among them some of his well-known variegated Zonal Pelargoniums. It had been previously determined by the Committee that all awards for Zonal Pelargoniums should be deferred till the May special meeting for this class of plants. Messrs. Lane sent a cut specimen of *Weigela purpurata*. Mr. Whiting, of The Deepdene, Dorking, exhibited a seedling *Rhododendron* resembling *Nesterianum*; and Mr. Lawrence, gardener to the Bishop of Winchester, a fine specimen of *Odontoglossum luteo-purpureum*, a splendid species. This received a special certificate. Mr. Peat, Park Hill, had a golden variegated form of the common *Valerian*; and Mr. Laxton, Stamford, some seedling Zonal Pelargoniums, on which judgment was deferred till the May meeting. Mr. Max Leichlin, of Carlsruhe, sent a specimen of *Lilium Thomsonianum*. Much discussion arose as to its merits, but in compliment to the exhibitor a first-class certificate was awarded. More will be said on this plant, as the question as to its being a true *Lilium* is referred to high authority. It evidently was not exhibited in its true character. Major Trevor Clarke sent a fine

specimen of a *Sempervivum*; the specific name was not decided upon, although an old and well-known plant.

GENERAL MEETING.—Major R. Trevor Clarke in the chair. After the usual announcement of awards, and the election of fourteen new Fellows, the Rev. M. J. Berkeley addressed the meeting, remarking, in the first place, that at a recent meeting Mr. Bateman had exhibited a portion of an *Ehu* covered with knots, which he had met with at Pau, and that he himself (Mr. Berkeley), had then stated that he was acquainted with a tree in Rutlandshire similarly covered with knots, on each of which there was an adventitious bud, but there were few of these buds in the specimen from Pau. He now produced a number of specimens from Chiswick most curiously knotted, each bud having one, and some of them several, adventitious buds. The knots were precisely the same things on a small scale as the gnarls on the stems of Elms, which last make beautiful articles of furniture.

Mr. Berkeley then read the following *precis* of the statements received as to the modes of preserving the fruit, from the persons who competed for the prizes offered at the February meeting:—

1. As the flavour of fruit is so easily affected by heterogeneous odours, it is highly desirable that the Apple and Pear rooms should, if possible, be distinct from each other.

2. That the walls and the floor should be annually washed with a solution of quicklime, to which common salt is sometimes added.

3. That the room should be perfectly dry, kept at as uniform a temperature as practicable, and well ventilated; but that there should not be a thorough draught, which would cause the fruit to shrivel.

4. That the utmost care should be taken in gathering the fruit, which should be handled as little as possible.

5. That for present use the fruit should be well ripened; but if for long keeping, it is better, especially with Pears, that it should not have arrived at complete maturity. This point, however, requires considerable judgment.

6. That no imperfect fruit should be stored with that which is sound, and that every more or less decayed specimen should be immediately removed.

7. That, if placed on shelves, the fruit should not lie more than two deep, and that no straw should be used.

8. That where especially clear and beautiful specimens are wanted, they may be packed carefully in dry bran, or in layers of perfectly dry cotton-wool, either in closed boxes or in large garden pots. Scentless sawdust will answer the same purpose; but Pine sawdust is apt to communicate an unpleasant taste.

9. With care early Apples may be kept till Christmas, while many kinds may be preserved in perfection to a second year.

Mr. Berkeley next directed attention to one of Messrs. Veitch's Orchids, not as an object of beauty, but as a physiological curiosity. This plant, *Thrixspermum luniferum*, had never produced a single leaf either last year or this, but the place of leaves had been supplied by its aerial roots, which have a green tint, resulting from chlorophyll beneath their surface. The prize offered by Mrs. Lloyd Wynne for Narcissus at the first Tuesday Meeting in April, 1870, was then referred to, and it was stated that the object of the prize was not to bring together a large number of mere varieties, although these would not be excluded, but the best collection of species; and Mr. Berkeley added that he was glad to find that Mr. Baker, of the Kew Herbarium, had undertaken to give an account of the genus. The collection of *Cephalotaxus* from Messrs. Lee, of Hammersmith, was then noticed, and the species which were distinct pointed out, the lecturer observing that when *Cephalotaxus fortunei* was first imported it was supposed to be diocious, but specimens both at the Lord Chief Baron Pollock's, at Hatton, and at Mr. Standish's, had produced on the same plant both male and female flowers; therefore the plant is monoecious. An example of *Picea pinsapo* was exhibited as one of the effects of the heat of last summer, and it was mentioned that the same tree had produced its male inflorescence in two or three parts of England, and the female at Hastings. With regard to the Lily from Mr. Max Leichlin, of Karlsruhe, Dr. Thomson, after whom it had been named, was in doubt whether it was a true *Lilium* or an *Anthericum*, and had taken specimens to Kew to determine its relationship. Mr. Berkeley then remarked that, although the Apple crop was good last year, and it had been observed that it was rarely so in two consecutive years, there was every prospect of its being again good this season. As to Pears, it had been mentioned in some of the gardening periodicals that the blossoms were injured, but in those he had examined he had never found a stigma destroyed, and it was there that the injury from frost began, the stigma dying, and death being carried down to the ovules. Mr. Berkeley concluded by pointing out a *Fungus* found by Mr. Edmonds under Cedar trees at Chiswick, and which also occurred under these trees at some other places, adding that an account of it would be found in the last volume of the Linnean Society's "Transactions."

Major Clarke said he would bring under the notice of the meeting a little flower belonging to the family of *Gladiolus*, many of which were gorgeous in crimson and gold; but how different was this! It was remarkable for its small, pure pale blue flowers, and was just one of those treasures Mr. Wilson Saunders deals with in his "Refuge." Another *Gladiolus* which he had brought with him he believed was *G. tristis*, and it had flowers of a pale primrose tint, and was exquisitely fragrant at night. The shabby-looking dormant plant which he next laid before them was the old *Hemerocallis japonica* or *Funkia ancon-*

data, rarely seen in flower, simply because its cultivation is not understood. It was perfectly hardy as to its foliage, but not hardy as to producing its flowers in perfection. He had a plant by the side of one of his ponds, which, though growing freely, rarely flowers, but if it flowers these are distorted. In a warm house, however, the plant flowers in perfection, its blossoms being of a beautiful ethereal white. The key to its successful cultivation was this: the plant forms a number of crowns or heads, the principal of which produces a flower, but unless well grown and strong it will not flower at all, and fresh crowns will be formed. All the subordinate shoots or heads must, therefore, be pinched off except one for flowering in the following year, and unless this is done the plant only affords an immense mass of leaves.

Mr. Bateman said those who had cultivated Cucumbers in the old frames knew they would not grow straight, and mentioned it was related by Mr. Smiles of George Stephenson, that feeling annoyed at his Cucumbers always growing curled, at last the idea struck him to grow them in glass tubes, when he exclaimed, I think I have "bothered them now." After stating that the Shaddock would grow well under the shade of other trees, and that the Kumquat (of which a fruiting shoot was shown by Mr. Sherratt), is still as beautiful as ever in a warm greenhouse or stove at Knyversley, Mr. Bateman offered some remarks on the Orchids, observing, in the first place, that the *Thrixspermum* referred to by Mr. Berkeley was not the only instance of an Orchid doing very well without leaves. Two in the East Indies, one an *Epidendrum* and the other an *Angraecum*, never produced leaves. Messrs. Rolisson's collection was especially commended to notice, and it was mentioned that that firm had been growing Orchids before those who generally exhibited these plants at the Society's meetings. The variety of *Oncidium encallatum*, from Messrs. Veitch, and *O. nabilegnum*, sent under the name of *O. phalaenopsis ocalata*, were next noticed, the latter as coming from a greater elevation than any other Orchid—namely, about 14,000 feet above the level of the sea, the former as growing 6000 feet lower down. A *Neottia* from Mr. Wilson Saunders, having mottled leaves, showed that Orchids were determined to keep pace with the age, for the rage seemed to be variegated plants, and a prettier plant than this with mottled leaves could scarcely be found. With regard to the fine specimen of *Sophranitis grandiflora*, Mr. Bateman said the pure burning red flowers vary in the plant's native country from 1 to 3 inches in diameter; in the specimen before him they were just under 3 inches, and were the largest he had seen, except at the Bishop of Winchester's, where they were just over 3 inches. The beautiful examples of *Odontoglossum macranthum* hastiferum from Messrs. Veitch, and of *Odontoglossum luteo-purpureum* from the Bishop of Winchester's gardener, were then pointed out, as well as *Warsewiczella discolor*, with pretty *Gloxinia*-like flowers, and some other Orchids which had been shown at previous meetings. Mr. Bateman, in conclusion, directed attention to a flowering truss of the pretty Sikkim *Rhododendron* named after himself.

Major Clarke remarked that one of the *Neottias*—*N. nidus-avis*—is a British species, also that Messrs. Lane's show would open on the 7th inst.

THE ORIGIN OF DOMESTICATED PLANTS. DEMONSTRATED BY THE CULTIVATION OF THE WILD RADISH.

[THERE is no subject in gardening of greater interest than the origin of those cultivated esculents which contribute so much to our pleasures and necessities. The greater mass of people never give the subject a consideration; they are content to eat, live, and enjoy, heedless of the efforts that have been expended, or the means adopted, to minister to their necessities. But there are many in whose minds the question, Whence are they? has often arisen, and to which a reply has been sought in vain. To our good friend M. Carrière, of the *Muséum d'Histoire Naturelle* of Paris, we are indebted for the following most interesting and practical solution of the subject, and we feel certain our readers will unite with us in thanking him by a full appreciation of his ingenious labours.—Eds.]

On seeing our fruit trees and kitchen garden plants, and eating their produce, we naturally ask the question, How have they originated? Two answers alone are possible—either to admit that they are modifications or descendants of a wild type, or that they were created much the same as they now are. As every-day facts, supported and explained by science, contradict the latter supposition, the former we may consider is the truth.

To trace the origin of a plant, how should we proceed? By tracing analogies, and making comparative experiments, studying well their results, in order to form deductions and find out resemblances.

It is impossible to enter fully into the origin of all domesticated plants, and it is equally impossible to trace even one of them absolutely to its original form; but let it be granted that *Raphanus raphanistrum* is a species, not, however, in the sense in which naturalists generally accept the word—that is, as being an absolute type, of which the extension is limited

Every scientific inquiry may be compared to a line which can always be extended from each end. But as the progress of anything cannot be ascertained without knowing the different stages, as the distance travelled can only be measured from a fixed starting point, I will take as that starting point *Raphanus raphanistrum*, as it is found wild, and which is represented in figs. 1, 2, and 3.

Raphanus raphanistrum, or the Wild Radish, is a weed belonging to the natural order Cruciferae, and often confounded with *Sinapis arvensis*, or Charlock. It is much branched, the ramifications strong, wide apart, springing from the collar, with lyrate leaves (fig. 1). In a wild state it is found with pale yellow, as well as with pure white or lilac-veined flowers.

Having stated what are the principal characters of *R. raphanistrum*, I will mention how the idea occurred to me of subjecting the plant to cultivation. Born and brought up in the

tained were nearly similar. At Paris the long form of root predominated, and was almost the only one, and in the country it was the reverse. Again, whilst at Paris, only white or rose-coloured roots were produced, in the country these were purple, or very dark brown verging on black, and there were some of all forms and colours. There were at once representatives of the various sorts both of Radish and Turnip, a statement, however, which must not be taken as meaning that I consider the two vegetables the same. There was even one (fig. 5) exactly like the Chinese Winter Radish, and with a flavour intermediate between that of the Radish and the Turnip. Finally, one of the most singular of the varieties raised (fig. 9) was of a beautiful purple colour, both externally, and in its flesh, being in this respect similar to the red-fleshed Beetroots, and purple-fleshed Potatoes, among vegetables, and the Sanguine Peach and Pain-Vin Pear among fruits.



Fig. 1.
Wild Radish in flower.

country, most of my youth was spent in the fields. One day I observed some resemblance between the pods of the garden Radish and those of the wild one, which at that time I mistook for Charlock. I found them good to eat, and it occurred to me to sow the seeds, but my intention to do so was not carried out till long afterwards, when, hearing of various experiments made with Cabbages, Beet, and Carrots, the remembrance of what I called Charlock occurred to me, and I determined to experiment on the plant. With this view, I gathered in the fields, and as far as possible from allied plants, such as Cabbages, Turnips, Radishes, &c., seeds of *Raphanus raphanistrum*, and sowed them with the intention of resowing in several successive years, selecting every time seeds from those plants which presented the most promising features.

To give my experiment, which was continued during five successive years, a greater amount of certainty, and to impress upon it more deeply the seal of truth than would otherwise have been the case, it was carried out under two different conditions—viz., at Paris, in the light, dry soil of the nurseries of the Muséum of Natural History, and in the country, in a strong calcareous clay. Under these two conditions the results ob-

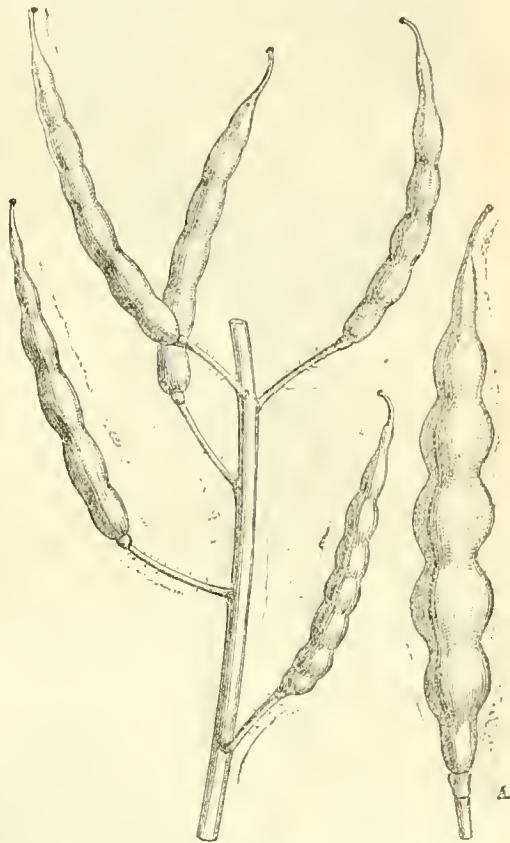


Fig. 2.
Pods of the Wild Radish. A. Pod of the same improved.

The better to show the differences between *R. raphanistrum*, and the varieties which it produced, I will place in opposition the leading characteristics of each, which are as follow:—

RAPHANUS RAPHANISTRUM, the type. *Flowers* pale yellow or white, sometimes lightly streaked with purple. *Pods* very small, inclining, only slightly fleshy. *Roots* long and thin, dry, fibrous, of one uniform shape, always white, hard, sub-ligneous, uneatable.

VARIETIES PRODUCED BY RAPHANUS RAPHANISTRUM. *Flowers* white, rosy purple, or yellow, of one colour or more frequently streaked. *Pods* variable in size and form, inclining, occasionally upright, sometimes very strong and almost as thick and long as those of the Madras Radish, being then succulent and good to eat. *Roots* large, sometimes of very great size, very variable in form and colour, fleshy; the flesh white, sometimes yellow or rose-coloured, sometimes purple, succulent and good to eat.

From the above it will be seen that the differences between the type and the varieties which proceeded from it were considerable, especially considering that they were the results of only four generations. I will now proceed to point out the principal characteristics of the roots shown in the figures.

Figs. 1, 2, and 3 are typical of the Wild Radish. Fig. 1 is a representation (one-half the natural size), of the end of a

flowering shoot. *Fig. 2* is a portion of the shoot with pods of the natural size, and beside this shoot is a pod λ of the plant as improved. *Fig. 3* (reduced one-half) represents a root of the wild plant as seen in plants which have attained about their full growth.

As in the present case the whole of the progress made consists in the increased size of the roots, it will be useful to state their comparative weight in the wild and cultivated states. The root shown in *fig. 3* (this, like all the succeeding figures, is half the natural size), when about full grown, weighed 339.515 grains (22 grammes), and was white, dry, fibrous, leathery, and unstable, even when fresh-taken up.

The root shown in *fig. 4* was white, slightly tinged with purple at the top. Its length from the collar to the extremities of the roots was 17.717 inches, its greatest diameter 2.362 inches, and it weighed 12.169 ozs. (345 grammes).

The root represented in *fig. 5* was of a beautiful vermilion-rose colour, and near the top of a very dark red approaching to purple. Its length

9.843 inches, its diameter slightly exceeding $2\frac{1}{2}$ inches, its weight 7.09 ozs.

Fig. 9 was blackish-purple veined; flesh purple, shaded and streaked with a deeper colour to a depth of four-tenths of an inch, the rest of the flesh white, slightly tinged with purple.

Its length was 8.662 inches, its diameter slightly over $2\frac{1}{2}$ inches, its weight 5.115 ozs.

In the root shown in *fig. 10* the skin was of a deep blackish maroon, almost black; the flesh was milk white, and very delicate. The length was 10.630 inches, the diameter 2.362 inches, the weight 3.069 ozs.

Fig. 11 is a representation of a root with a fine very thin skin of a beautiful rose colour, and very juicy almost melting flesh. Its regularly swelling, much flattened form gave it the appearance of a handsome Radish, such as a gardener would pick out for saving seed from. Instead of growing under ground it grew almost on the surface like some kinds of Turnips. Its whole length was 4.725 inches,

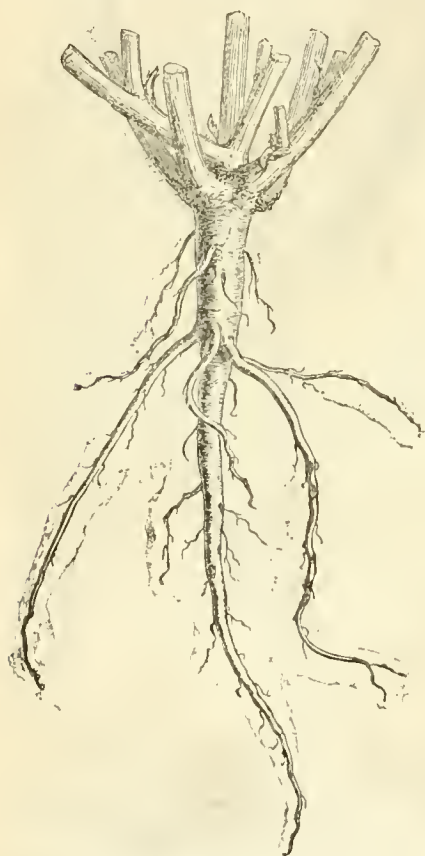


Fig. 3.—Root of the Wild Radish.



Fig. 4.—Wild Radish improved.



Fig. 5.

was $15\frac{1}{2}$ inches, its diameter 3.543 inches, its weight 15.696 ozs. It was so like what are known in the trade as the China Radishes, that if mixed with these it would be impossible to distinguish it.

The root shown in *fig. 6* was of a dark brick red; the skin rugose, as if corky, or embroidered; the form exactly that of a Turnip; the flesh rose, streaked or veined with red to a depth of four-tenths of an inch, the rest white, slightly tinged with flesh colour. Its length was 10.236 inches, its diameter 5.118 inches, its weight 22.046 ozs.

Fig. 7 represents a root with a white skin, very smooth and even-surfaced, its appearance like that of a fine, large, well-grown Turnip. Its length was nearly $12\frac{1}{2}$ inches, its diameter nearly 4 inches, its weight 22.963 ozs.

Fig. 8 was white, purplish near the collar; its length was

its diameter half the length, and the form so flattened that the thickness was only $1\frac{1}{2}$ inch. The weight was 2.399 ozs.

The whole of the roots, whatever their colour or form, were succulent, and had a well-marked Radish flavour, approaching in some to that of the Black Spanish Radish. On careful tasting some appeared to me to have a very slight sugary flavour, with a tendency to approach that of the Turnip. In none, however, was the Turnip flavour appreciable in a raw state, but when they were cooked the case was very different. Then the pungency of the Radish entirely disappeared, giving place to the Turnip flavour, which, instead of being mild, was very strong. The smell of Turnips was also emitted by the roots when exposed to the air after having been taken up, and when decaying. The flesh (I am referring to the cooked roots), was not exactly like that of the Radish, being much firmer, hardly

so sugary, but floury, and therefore very nutritious. Thus I had plants which could neither be classed with the Radishes nor

vegetable considered it delicious, and it may be added that, however large the roots, not one was hollow; also that they remained good for several months after being taken up.

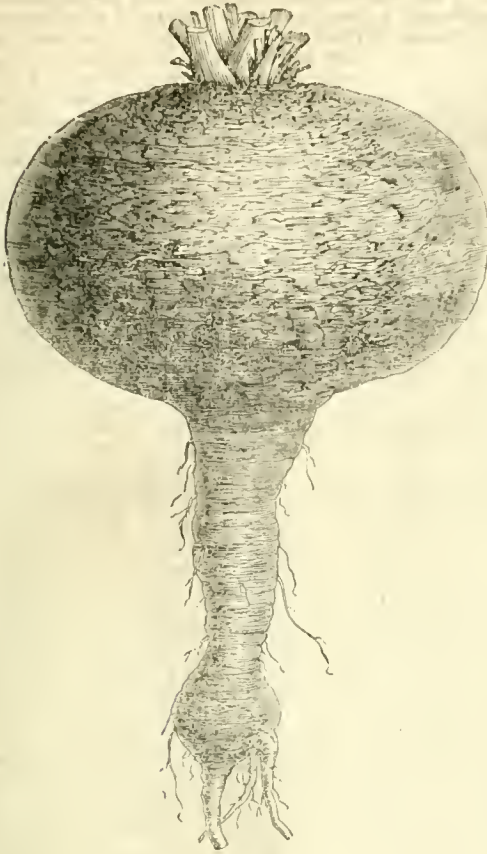


Fig. 6.

the Turnips, but which seemed to partake of the nature of each of these, being Radishes in their raw and Turnips in



Fig. 7.

What advantages can be derived from these experiments? It would be rash to hazard a decided opinion, but the results already obtained favour the idea that in this way new races of



Fig. 8.



Fig. 9.

their cooked state; but it must be admitted that the Radish flavour was by far the stronger of the two. All who ate the

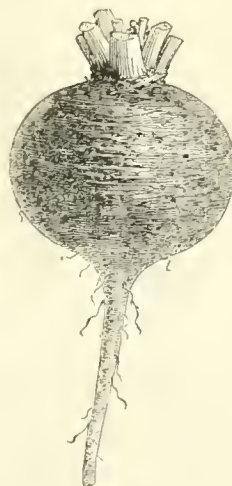


Fig. 10.

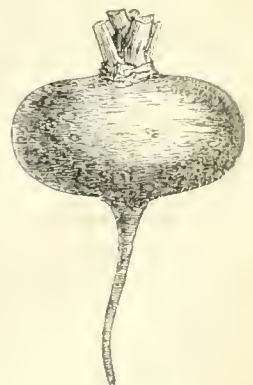


Fig. 11.

plants suitable for agriculture and horticulture may be produced. Already we may consider the Wild Radish improved as being an economic plant, a particular kind of vegetable, a family Radish I may call it, obtained from a wild plant hitherto regarded as a mere weed. I call it a family Radish for two reasons—first, because it grows so large, and second, because when taken up and kept in a cellar it can be eaten all through

the winter like Turnips, for which it to a certain extent serves as a substitute.

In the experiments which I have given an account of, there is one important fact which requires special notice, and that is the influence exercised by the conditions under which we operate—conditions of air, moisture, and dryness, heat and cold, aspect, &c., which collectively constitute climate; also, of soil both chemically and physically, subsoil, &c.—all circumstances that are extremely variable, and which, in conjunction with climate, influence the life and characters of living things.

Soil is not uniform in its influence, for the latter is regulated not only by the chemical composition of the soil, but by its physical characters, and these may be modified in a thousand different ways; hence in two soils, supposing these to be perfectly alike (and that cannot be), very different results will be obtained if the one be cultivated and the other not, or if both be cultivated but in a different manner. It is a well-known fact that if on two adjoining pieces of land the same description of plant is grown, frequently the results obtained are very different, and this is especially the case with the Vine. From the same kinds of Grape cultivated in the same manner, the wines produced are occasionally totally unlike in quality and keeping. I repeat, then, that the mode of cultivation, by modifying the conditions in which the plant is placed, exercises a considerable influence on the crop produced. This fact is placed beyond doubt by the experiments I have related, and which have resulted in such changes in the Wild Radish as those shown in the accompanying figures. This plant has grown from time immemorial, and in large numbers, in the fields, but had never produced anything different from what it does at the present day—namely, comparatively low, much-branched plants with small pods and white, slender, fibrous, dry, almost woody roots, yet in only four generations and five years it has become so changed as to constitute a new economic plant. But, as already remarked, the results obtained in Paris and in the country were different in their details, though similar as a whole. In the country, in a strong calcareous clay soil (Wheat land), the short forms of root predominated, indeed, were almost the only forms produced, whilst at Paris in a very light, warm, and deep calcareous soil only long, white, or somewhat purplish roots, of which *fig. f* may be taken as an example, were obtained. These facts explain why, when sowing the same seeds, different results occasionally follow.

Having shown how I transformed the Wild Radish into a domestic plant in four generations, I will point out the means by which these results can be obtained as quickly as possible. It is simply selection.—(Extracted and translated from a pamphlet by M. Carrière, Head Gardener in the Nurseries of the *Muséum of Natural History*.)

MAIZE AS A GARDEN ESCULENT.

I HAVE sent you a box of choice Maize seed, which I should be thankful if you would have exhibited quickly at the Royal Horticultural Society's, and afterwards sown in the garden at Kensington, or at Chiswick, for trial.

I have a settled conviction of the importance of introducing this Maize as a garden esculent to supplement Peas, &c., in the autumn. Could you have seen the splendid cobs, at least three times the size of the best common Yellow grown here, and the fine plants 10 feet high, you would also have become enthusiastic. They have already taken some prizes, and Messrs. Barr and Sugden, to whom I sent them, think them the most wonderful seeds ever seen in England. The American Commissioner gave them to me, and my seeds grown here are quite as plump and ripe as, if not finer than, the originals. If they were grown properly they would prove that Maize can be grown for table use in England.

Some of the kinds (such as the White Georgian) are wonderfully fine. No such collection has ever reached Europe, and least of all will such an occasion again happen as these seeds being all tried together, and sent to Kensington afterwards. It cannot be too much impressed on growers that to attempt raising varieties without experience must be generally unsuccessful. Here they have twenty kinds to choose from. When has this ever occurred in England?

Mr. Hughes speaks of his success in the cultivation of the Dwarf Canadian Maize under opposing conditions, and this only confirms my own conviction, that failures have hitherto resulted either from selecting common varieties, like the ordinary yellow of commerce, which can be imported so readily, and is unfit for table purposes, or from ignorance of the other valuable

sorts, than from the English climate and soil being not adapted for Maize. I do not clearly identify the Dwarf Canadian with any of the twenty varieties raised here last season, but then I have not, as yet, seen the seeds. It may prove to be the same as that which Judge Haliburton used to grow regularly in his garden at Isleworth, and circulate under the name of "Sam Slick."

A correspondent, also, writing in a contemporary journal, mentions the "Ten-weeks Maize" (*Maïs de poulet*) as being easy to cultivate, and profitable; but if the name indicates its nature, it would not fall within the list of table Maize, which is what I particularly cultivate, and which is, at present, so unknown in this country. In speaking of this Ten-weeks Maize, the writer suggests the propriety of removing from the plants their male flowers after a certain period—as far as I understand the article—of inflorescence, in order to promote the vigour of the cobs, and increase their number. This might be tried, for the plants appear to have a superabundance of pollen, and this always lowers their vitality. With the new varieties which I grow, this would seem almost superfluous, for could a Maize plant, even though 10 feet high and vigorous in proportion, be expected to mature, especially in this climate, more than two huge cobs with from 500 to 600 seeds in each? In this way the Maize produces easily more than a thousandfold! This is surely a remunerative crop of itself, and of the simplest culture.

As yet, Maize has been only partially tried with sewage, but the results have been great, even with common yellow Maize, which produces cobs of little more than a third of the size of some of the sorts I mention, and is of such inferior value. With high cultivation I do not see why the fine and immense milky white Georgian Maize should not produce two thousandfold. If taken in a green state for the table, as proposed, the tops and leaves would be of great value for feeding cattle, so that it may be fairly concluded that, even on a small scale, Maize for table purposes must prove a remunerative addition to our list of delicate and nutritious vegetables.

I may be allowed to repeat that it is not probable that such an occasion as a unique selection from the choicest of the Maize grown in the States, possessing as they do such a range of climate and soil, and exhibited in Paris, will again occur readily. And when these twenty varieties have been tested by a season's growth in these latitudes with such visibly good results, we are justified in expecting that a good number among them will retain their popularity, ranging as they do over two months of difference in the period of their ripening.—T. C. BRÉHAUT.

NOTES AND GLEANINGS.

MR. JAMES FRASER, widely known and respected as the gardener to John Shaw Leigh, Esq., at Chilwell Hall, near Liverpool, and at Luton Hoo Park, Bedfordshire, died suddenly at his residence at Leighton Buzzard on the 23rd of March, having been actively engaged a few minutes before his decease in making arrangements for commencing business, and has left a widow and children to mourn over his removal. Besides being a good botanist, florist, and general gardener, Mr. Fraser excelled in the knowledge and practical treatment of Alpine plants, Orchids, Mosses, and Ferns, and thus did much to foster a taste for the striking in form and the beautiful in outline. Though not at all insensible to the charms of bright colour, we have known him go miles to see an old pollard wreathed with the common Polypod, and his eyes would sparkle and his countenance brighten, as he turned up the fronds and looked at what he called the stud-like spore-cases, as we have never seen him do in looking on the finest flowering plants. Not a few in far-away lands, as well as in these islands, on reading this notice will feel that now for them there is left one kindred spirit less.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ALTHOUGH the season cannot be called backward, the prevalence of cold winds and snow storms from the beginning to the end of March has considerably retarded garden operations, therefore it is incumbent to bring up any arrears of work as expeditiously as possible. *Artichokes*, remove the greater portion of the litter; dig and manure the beds. *Jerusalem Artichokes* may still be planted. *Broccoli*, when removed, let the ground it occupied be immediately manured and dug. This

has proved a favourable season for the production of Broccoli, therefore a good opportunity exists for noting and preserving the best varieties. Let a sowing of all the Broccoli be made by the middle of the month. Do not forget the Wilcox, Somers's Particular Late, Snow's Winter White, &c. Make ample sowings of all other Greens about the same time, more especially *Brussels Sprouts*, undoubtedly the most useful Greens at present known, for a long winter. It is, moreover, the hardest we have, and produces, if sown in time, a greater bulk of produce than any other edible kind. Beds of seedlings must frequently be looked to, and slugs checked in their attacks. As an additional precaution, dust the plants with lime or soot. *Cucumbers*, sow the Ridge immediately, and throw grass mowings, leaves, manure, &c., into a heap to ferment, ready for making the ridge. *Carrots*, sow a little Horn once a-week or fortnight until midsummer. *Onions*, throw up some beds 9 inches above the general level in the poorest part of the garden, and sow the Silver-skinned for pickling. Sow very thickly, and tread the bed very firmly, using scarcely any soil to cover them, rather shaking some old wet litter over the seeds to keep them damp. *Potatoes*, lose no time, if hitherto neglected, in putting in the main crop. Manure with wood ashes, lime, or soot, in preference to stable manure. *Scarlet Runners*, a few may be sown towards the middle of the month, and a few early *Kidney Beans*. *Tomatoes*, gradually harden them off in cold structures, so as to be ready to plant out in the beginning of May. Sow successions of *Radishes*, *Cresses*, &c. *Red Beet*, *Scorzonera*, and *Salsafy*, may be sown any time during the month.

FRUIT GARDEN.

Top-dress and stake *Raspberries*, and see that all superfluous suckers are drawn away. Cut down the double-bearing *Raspberries*, weed, and draw away all suckers but two or at most three, from the stools, and top-dress them. They will never succeed unless they be kept very thin, leaving their bloom-buds to form in a short period; they require much light. Trim and top-dress the Prolific *Hautbois Strawberry*. These do well in beds if top-dressed. The removal of Fir boughs or other material from wall trees should not take place until the fruit is fairly set. Keep down the green fly as it appears on Peach trees. Inspect grafted trees frequently. Remove all shoots below the scion. Moisten the clay if cracked and dry. Look to last year's budded stocks, and search for caterpillars.

FLOWER GARDEN.

Look immediately to all arrangements necessary for a good bloom of *Roses*. Cuttings of the Hybrid Perpetuals, *Teas*, &c. propagated last autumn, and reserved in store pots through the winter, may be planted-out immediately. Equal parts of turfy sound loam, and of rotten manure, will grow most of them well. The China and Tea *Roses* will, however, enjoy a little sandy heath soil, and some charcoal dust in addition may be given for the whole family. If the loam is clayey, mix with it some sand. Attend to annuals in all their stages. If the kinds are liable to the attacks of slugs or snails, place an inverted garden pot over them. See that all evergreens are pruned when necessary, if not hitherto done. It will be necessary to pay *Tulips* very strict attention. Sometimes in consequence of the action of the wind on the flower stems there will be a cavity in the soil immediately round them, such must be carefully filled up, and the surface of the bed kept free from cracks, weeds, &c. Hail storms have been very prevalent of late. Nets with small meshes are apt to draw the stems, if too close; still, for the effectual preservation of the advancing buds, they cannot be dispensed with till the top cloth or awning is put over them. Supposing that all layers of *Carnations* are planted-out either in pots or in beds, the amateur may turn his attention to sowing any choice seed he may have by him; the 25th, or about that time, is generally preferred. In the meantime the compost may be prepared; and an effectual mode resorted to for destroying insects, and their larvae, is subjecting it to the action of a considerable degree of heat. Propagate *Pansies* from slips and cuttings; if any seedlings of good properties bloom strike the cuttings, but by no means remove the parent plant till stock is secured. Shade *Auriculas* during the day from powerful sun, and cover closely at night. Fertilise those flowers from which choice seed is required.

GREENHOUSE AND CONSERVATORY.

The variable nature of April weather, its fitful gleams of sunshine, and cold searching winds, often render the task of sustaining an equable temperature difficult. It must be remembered that the occupants of the greenhouse have, under

the excitement of a genial temperature, developed their tender shoots; therefore, direct injury would ensue from neglecting the precautions of regulating air and sustaining suitable heat. In introducing flowering plants, be careful that the specimen plants in the house are not crowded; the injury would be more direct at this season than at any time. In the small greenhouse the care most essential to the growing plants recently potted, is that of maintaining a moist, active heat, and insuring them regular supplies of water. It will be necessary to alter their arrangement occasionally, to allow increased room to the growing plants, repress the wild growth of some, and remove blossom-buds from those plants that are required to make robust growth. *Camellias* making their wood should have occasional shading. Keep a moist air about them day and night, otherwise they will grow long-jointed. A temperature of 55° at night, and 65° by day, should be maintained. Shade attentively the flowers in the show house or conservatory during bright sunshine, and continue to remove unsightly plants, and to introduce gay things from the other structures. Let all *Pelargoniums*, *Caladiums*, *Ginerarias*, &c., be well staked out in due time.

STOVE.

Make cuttings of stove stock whilst the propagating frames are at work. Do not forget the *Vincas*, *Thunbergias*, *Plumbagos*, and *Justicias*; these, although old-fashioned, contribute much to the general effect. The *Dendrobium* family is celebrated for beauty, and deserves every attention. Those plants recently potted will be commencing growth; allow of no diminution of bottom heat, and keep a moist, warm atmosphere. Give air when the thermometer indicates 90°. Continue to shift *Gesneras* and *Clerodendrons*, and regulate the position of the plants, following their natural peculiarities.

PITS AND FRAMES.

These will want not only daily but hourly attention. Propagating, pricking-out, potting, hardening-off, with shading, syringing, &c., will be the order of the day for three weeks longer, by which time a good supply of stock will be provided for both summer and winter, for out of doors and in-doors. Sow a general collection of annuals.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The fineness of the weather and the dryness of the ground tempted us to sow more *Onions*, a piece of *Parsnips*, a piece of *Early Horn Carrots*, and a few rows of *Pine-Apple Beet*, waiting a week or two longer for our general sowing of *Carrots*, *Beet*, *Winter Greens*, &c. Sowed also some rows of different kinds of *Lettuces*, thinly, so that they may grow to their full size without transplanting, a plan which we would adopt more freely if our ground were more extensive. We often transplant, not because we like it best, but because a little space for a seed-bed gives more ground for other crops.

Notwithstanding the mildness of the winter, we have scarcely noticed at any other time the surface of the ground colder than it has been this year in the end of March and beginning of April, and hence we hardly ever recollect seeds lying longer at this season in the ground, and not coming through it. We have scarcely seen any difference in the seeds of *Radishes*, *Peas*, &c., for the last fortnight or eighteen days. In some cases the rootlets had merely protruded, and no further progress took place in throwing-up the stem or seed-leaves. A warm shower would soon make matters look differently.

Planted more *Potatoes*, trenched-up a piece of *Horseradish* which was occupying more room than we found necessary, and laid the roots in a spare corner covered over with soil, where they will last us for some time. Now is a good time for making fresh plantations, and we have found no plan better than dropping pieces of the roots into holes from 15 to 18 inches deep, and partly filling the holes with ashes. For this purpose we like the crowns or the tops of the plants best, but pieces of the roots about 3 inches in length will do very well. In ground well trenched these should be planted in rows 2 feet apart and about 9 inches from each other in the rows, and in the second season after planting they will produce straight fresh roots that may be used to the very core, and prove very different from old hard roots.

Rhubarb.—Strong roots may now be divided, and planted at once, and well manured, will yield gatherings this season; but where there are other plants it is best to let such plants retain all their leaves for the first season after planting. It is quite a

mistake, even with established plants, to gather the leaf stalks too closely. A Rhubarb plant may even be killed by taking away all its leaves and thus starving the roots. Some of our most troublesome root weeds may be killed by cutting off every leaf as soon as it shows above ground. Horseradish, though so necessary, will become a bad weed if let alone, but even that, full of vitality as the root is, may be killed by cutting off every green leaf as it appears. Couch Grass, and the beautiful white Convolvulus with its white running roots, may be destroyed by never allowing a green leaf to remain. The evil is, that in their case the growth is so rapid that if a few leaves appear, say from the Convolvulus, the roots, from reciprocal action, will have obtained the power to throw up some more shoots; but even then the continual cutting will at last destroy the vitality of the roots, the smallest piece of which if left to itself would be sure to send up a twining shoot. Do what we may, however, this Convolvulus gives us work to do in the kitchen garden, because we cannot always cut off the young shoots in time, as they come through the ground. We cleaned a piece of ground once that was completely overrun with this Bindweed, by allowing it to be fallow a few months in summer, and during that time covering weed and ground together 6 inches deep with short grass. On turning up this ground the large fleshy white roots had either disappeared, or were found as decayed hollow skeletons. Unfortunately some years afterwards a few pieces were carried to the same piece of ground from the general rubbish heap. Nothing is more useful than this heap, but from it all seed weeds and root weeds should be excluded, unless the whole heap is subjected to a strong heat from fermentation.

Rhubarb, the undue gathering of the stalks of which has led to this digression as to root weeds, for the principle involved is the same, may be grown successfully in any out-of-the-way corner; ours is chiefly in a cold north border, but when wanted early a better position should be given to it. Strong plants are most easily obtained by dividing old roots, but good gatherings next season may be obtained from seed sown in the middle of the month, in a favourable aspect, and in rich, light soil. We have forced from such sowings the first winter, but the roots will be better in the second winter, and if let alone will produce heavily in the second spring. Of course, if so left, the plants must be well thinned to give room for the leaves to expand. There is frequently a prejudice in the case of Rhubarb for old large plants, just as there is for old plants of

Sea-kale.—Many are deterred from lifting a few roots, to put in a warm place, and thus have it on their tables much sooner than they can produce it out of doors, from the dread of the great care and trouble involved in forming a new bed fit for bearing. Merely as a matter of choice, for planting-out, we would prefer small last year's seedlings to older plants. These, planted-out now, or during this month, in good rich soil, will be fine plants for forcing in the ground, or for taking up next winter to be put in a dark, warm place. Several times when we have sown thinly we have had fair forcing plants about nine months after sowing, but, of course, we prefer them to have two seasons from the seed. When sown in beds, in patches to be covered for forcing, they should have two summers before forcing them. Even without sowing at all, most of those who grow a few plants might take up and force some every year, in any dark, warm place; for 6 or 9 inches of root will yield as fine gatherings as if you had it much longer, and every bit of the side shoots and main root, though not so thick as a little finger, if from 4 to 6 inches long, will do for planting, and very often do as well as seedlings of the previous year. It is just as well if the top end of these is dried a few weeks before planting, which is easily effected by packing the pieces in soil under a little protection, and leaving the top end exposed, when it soon cicatrizes or heals over, and ere long little bud-dings of growth will begin to appear. In planting these pieces the top end should be about level with the surface of the soil, and if done early, as in March, or the beginning of April, a handful of ashes laid over each will be a preservative. When to be covered with pots out of doors, no plan is better than the old one, of having three young plants in a circle, to be thus covered. When to be raised for forcing, we prefer growing the plants in two rows 2 feet apart, and from 6 to 9 inches apart in the row. They would need more room if standing long.

As one proof bearing on the fact that older plants are not superior to younger ones for planting, we may mention that one year, having taken up more than we liked, and had gatherings from almost every plant left out of doors, also from the rats

having purloined every seed that was left to ripen, we sent for some seedlings to help us in the emergency, but instead of small young plants we received such large roots, that if we had obtained them in winter we would have forced them. We planted them carefully, though we would have much preferred smaller plants, and what in the circumstances rather surprised us was, that the bits of roots treated as above, and planted at the same time, were by far the best plants in the autumn—so good that some of them were forced the first winter, and were very fine in the second. When we can manage to obtain seed, we sow rather thickly, let the plants take care of themselves the first season, and transplant in the following spring. But for space we would sow at once where the plants were to stand. In the latter case more care is needed in keeping the fly from the young seedlings. Sometimes it is very troublesome, and, therefore, young one-year seedlings, or pieces of roots, are better for those having small gardens.

Asparagus.—This is a good time for sowing either for lasting beds, or merely in seed rows, the plants to be afterwards transplanted. The ground intended for fresh plantations cannot be too well turned, nor the manure given too well incorporated with the soil. Surface-manuring every season, however, is of more importance than very rich manuring at first. The old bed plan has its advantages, one of which is, that a new bed may be drained beneath by having a foot or 18 inches of prunings and wood rubbish placed under the soil of the bed. When fine green shoots, however, are chiefly prized, Asparagus may be grown most successfully in rows from 2½ to 3 feet apart, and if the soil is strong and heavy, each row should be raised a little in the centre. Established beds or rows should now be slightly forked and cleaned before the shoots appear; and a slight sprinkling of salt over the ground to give it a whitish appearance, if at this season it do not much good to the Asparagus, will at least keep slugs and snails away. The old general plan of piling manure on Asparagus beds in winter was only a good makeshift, as salt and other manures are most beneficially applied when the Asparagus is growing. Rough manure, however, can with difficulty be applied in the summer months, unless there is room between beds or rows.

When Asparagus plants have to be obtained from a distance, it is not so easy to have them growing; but the best time for planting, when the plants can be had near at hand, is just when the growth above ground is about 3 inches in length. When thus planted the roots should be kept moist, covered up with a mat, then nicely spread out on the ground, slightly covered and firmed, then watered slightly, and the soil finally put over them. Thus treated they will scarcely suffer from the brightest sun, and begin growing at once. For this planting we prefer plants one or two years old from the time sown to older and larger plants, which always suffer more from removal. When sown at once where the plants are to remain the plants should be thinned out in the rows to from 9 to 12 inches apart.

FRUIT GARDEN.

Took away much of the protection from fruit trees in the middle of the week, and in most other respects our work was merely a continuation of that previously recorded.

ORNAMENTAL DEPARTMENT.

Both out of doors and in-doors we have been very busy; moving plants and placing Azaleas and other plants in a cool corridor fronted with glass, as we expect but little frost now. We have not moved Calceolarias as yet, but exposed them during the day. Single Violets are now scarce, but the Neapolitan are taking their place well. Moved Pelargoniums in bloom to the conservatory to take the place of Azaleas, &c. Preceded with potting and propagating, and commenced clipping Box edgings. We have done this with a scythe, but this mode requires a man with a fine eye and a firm wrist, whilst almost any good workman can do the work well with a pair of shears and garden line stretched along the centre of the Box, and clipping the two sides first. There is something charming in Box well kept. But for the pressure of work next month, we would have deferred the clipping for a month, as the Box will look brown if we have much frost. Slate and the black metallic tiles are, however, better than Box for edgings in many cases, as after being put down they need no attention.—R. F.

TRADE CATALOGUE RECEIVED.

Charles Turner, Royal Nurseries, Slough.—General Spring Catalogue for 1869.

COVENT GARDEN MARKET.—APRIL 7.

A MODERATE supply and very little business doing. Quotations remain much the same.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	2	0	2	6	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	12	0
Black.....doz.	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries.....oz.	1	6	2	6
Grapes,Hothouse.....lb.	15	0	20	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	1	0	3	0
Beans, Kidney.....hd.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,punnet	0	2	0	3
Broccoli.....bun'dle	1	0	2	0	Onions.....bushel	8	0	12	0
Brus. Sprouts $\frac{1}{2}$ sieve	3	0	3	6	Parsley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	0	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	8	0	0	0
Carrots.....bunch	0	6	0	10	Potatoes.....bushel	4	6	6	0
Canflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....bundle	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	0	6	1	6	Rhubarb.....bundle	0	6	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bun'dle	3	0	5	0	Turnips.....bunch	0	1	0	6

TO CORRESPONDENTS.

BOOKS (*J. Williams*).—Johnson's "Science and Practice of Gardening," and "Chemistry," in Chambers' Educational Course. (*Weston*).—You can have the "Orchid Manual" from our office if you enclose thirty-two postage stamps with your address.

HEATED FERN CASE (*An Old Subscriber*).—A drawing and description of one is in No. 69 of this Journal. You can have a copy by post if you enclose four postage stamps with your address.

BUDDING ROSES ON MANETTI STOCKS (*R. Walpole*).—"You may bud Manetti stocks as soon as the bark on the stock will run, and as late as it will run. Bud on the stock as closely to the roots as you can; for this purpose scrape away the earth, if the roots are buried deeply. You can use the stocks bought last season. Do not bud on the wood of this year's growth unless the bark of the old wood will not run."—*W. F. RANGLIFFE.*"

WILD FLOWERS (*J. D. C.*).—We cannot conclude the work until all the native flowers have been portrayed, or the work would be imperfect. We hoped to be able to publish more than four species in each number, but the expense of colouring by hand forbids.

GREENHOUSE PROPAGATING BOX (*J. A.*).—You will not succeed with the propagation of Begonias in the way you are at present trying, the atmosphere being not only too cold but too dry. The box you propose making over the flue will answer perfectly. We should make it from 2 feet to 2 feet 6 inches wide, inside measurement, and any length, making it fully 2 feet above the flue, and of that depth we would have 1 foot of brickbats for drainage, 2 or 3 inches of coarse gravel over these, and a few inches of some kind of plunging material, as sawdust, cinders, or sand. Have a glazed frame, which may be hinged at the back. Such a means for propagation should be in every greenhouse, especially in those of amateurs whose means for propagation are small.

CULTURE OF ACORUS CALAMUS (*J. B.*).—It will be necessary to provide the plant with 6 or 8 inches of mud or soil, two parts peat and one part strong loam, and 9 inches or 1 foot of water. Soft water is the best. It will not be necessary to change the water, but add to it at intervals as it evaporates, taking it from a pool or pond. Afford a light and airy situation, as we presume from your remarks that you purpose growing the plant in a vessel in-doors.

CUCUMBER UNFERTILISED (*North Wales*).—The fruit will swell whether the female flowers be fertilised by the male flowers or not, but in the latter case will not have any seeds. If the male flowers be all removed before expanding, the female flowers will set, and the fruit swell, but as we have stated before, there will not be any seed in such fruit.

MARANTA ZEBRINA LEAVES YELLOW (*A Gentleman*).—It is usual for the leaves to turn yellow at this season, and it is natural in Ferns, for the old growths go off as the young appear, and the former should be cut off by degrees as the latter become developed, in order to make way for them. The Camellia leaves fall off is due to the repotting and time of year, as a portion of the old leaves always fall when the new growths are being made. There is nothing unnatural in the brownness and falling of the leaves.

CAMELLIA LEAVES BROWNED (*Inscius*).—The leaf sent is yellow, and likely to fall, apparently from the plant making fresh growth. The brownness at the tip or end of the leaf may have been occasioned by syringing the plant, and allowing water to remain on the leaf for a considerable time. This might have been prevented by admitting air early in the morning, so as to dry the leaves before the sun shone powerfully upon the plant.

ROSES (*Idem*).—It will be well to remove all your Roses on the Manetti stock, as that succeeds in almost all soils, and will do so in light soil with good dressings of manure. The Briar does not succeed well in light soil, sending up too many suckers, which weaken the stock, and, of course, the Rose upon it. Roses on the Briar stock may be grown tolerably well in light

soil, if heavy dressings of manure be given, especially if the manure is of a cool nature, as cow dung; and supply them with water in dry weather; but for light soil we prefer Roses on their own roots, or budded on the Manetti stock. You would do well to remove the twelve loads of clayey pond cleanings to your new garden, and to mix them well with the soil where you intend planting the Roses on the Briar. It is not a question of Roses succeeding well in light soil, but of the stock succeeding in such soil, for unless the soil is suitable for the stocks, the Roses worked on them will not succeed. You may remove any trees and bushes you have planted, but you have no legal right to do so, though we should think few would object to your removing a part, thinning out every alternate one as you propose, but everything depends on your landlord's acquiescence and the agreement. You may, however, now take them up, pot them, and take them all away with you.

PANSY DIVISIONS (*F. L.*).—The Pansy slips now put in, though every division has roots, will not under any course of treatment bloom well enough in May for exhibition. Good plants from last year's cuttings should be planted, and very carefully indeed to have them in good bloom at the time you name.

SURFACE-DRESSING PLANTS IN POTS (*Idem*).—It is not desirable to cover the surface of the pots with cocoa-nut refuse, as you will not be able to know so well when the soil in the pots requires water as when there is no such surface-covering. The surfacing would, however, lessen the necessity for watering so frequently, and the refuse is a good, if not the best, material for the purpose.

SHADING A GREENHOUSE (*Idem*).—As you cannot attend to the house in the day, the best mode of shading would be to colour the inner side of the glass with chalk or whitening and milk, put on very thinly so as just to make the glass white. It may very easily be washed off and renewed as required.

POTS FOR ZONAL PELARGONIUMS (*Idem*).—The plants from last autumn's cuttings we suppose are now good plants in $\frac{1}{2}$ or 6-inch pots. The most vigorous and best plants may have 8 or 9-inch pots, but for the others 7 or 8-inch pots will be sufficiently large, and we would not have many in pots larger than the last named.

VINE LEAVES INJURED (*Clericus, Oxon*).—The leaf was much faded on reaching us, but on examining it closely we thought we discovered signs of the nibbling of the thrips. You can easily make yourself sure of this by examining the under sides of the leaves, and if present you will see little insects jumping, not wider than the red spider, but larger. If they are present, and in the state of your Vines, you can have no remedy but tobacco smoking. The thrips, however, would not cause the blotched marks on the leaves, that is the result of the sun shining on them when damp with condensed moisture. The remedy is giving air early before the sun strikes on the foliage. This Vine may be more affected because the roots may not be so strong as those of the others, and, therefore, besides the early air, may require a little shading for a time, or lowering 3 inches or so further from the glass. This will be easily done, and the cure easily effected, but if you have the jumping thrips, you will have to smoke several times before you free the Vines of it.

PLANTS FOR CONSERVATORY WALL (*J. A.*).—The plants named at page 112 may be grown in pots, but are better planted out in borders. A better selection for your purpose may be:—*Habrothamnus elegans*, *Hoya carnosa*, *Keanedya Marryatiae*, *K. inophylla floribunda*, *Lapageria rosea*, *Rhynchospermum jasmoides*, and *Sollya linearis*. These may be grown well in pots, but they must not be set on the flue. They should be raised so as to be about 1 foot above it. We would not advise their being put in large pots at once, for the one-shift system of potting has been long ago exploded; but for the first year at least keep them in pots of a size proportionate to the growth, training them so that they can easily be taken from the wall, and when they become good plants you may pot them in large pots, providing very good drainage.

DIEFFENBACHIA MANAGEMENT (*A Constant Subscriber*).—The Dieffenbachias are natives of South America—Brazil and Venezuela. They require a stove temperature, or from 55° to 60° in winter, and from 65° to 85° or 90° in summer, and a very moist atmosphere, but avoid syringing the plants, as they are liable to spot from moisture remaining long on them. They ought to be slightly shaded from very powerful sun. Water the plants freely when growing, afford them plenty of room, keep them rather near the glass, and give a moderate amount of air. Use a compost of two parts turfy loam, one part sandy fibrous peat, one part old cow dung or leaf mould, and one part of charcoal, in pieces from the size of a pea up to that of a hazel nut, and silver sand. Let the compost be rather lumpy, and provide good drainage.

ANNUALS (*B. B.*).—The following would be likely to suit you:—*Alyssum maritimum*, *Candytuft* in varieties, *Centranthus macrocephalus*, *Clarkia elegans* varieties, *C. pulchella* in varieties, *Collinsia bicolor*, *Erysimum Peroffskianum*, *Gilia tricolor*, *Mignonette*, *Nemophila insignis*, *Silene pendula*, and *Virginian Stock*. They must not be too much shaded by the bushes. For the sloping bank we should have lines of *Venus's Looking-glass*, blue and white, placing the white in the first line next the walk, then the blue, then *Mignonette*; and in order to the back *Sweet Alyssum*, *Virginian Stock*, *Saponaria calabrica*, *Tropaeolum Tom Thumb* yellow, and *Tom Thumb scarlet* at the back.

PLANTS FOR BOGGY GROUND (*C. R.*).—The piece of ground being too wet for *Rhododendrons*, probably some of the bog plants would suit you, as—*Alfalfa ranunculoides*, *O-munda regalis*, *Menyanthes nymphoides*, *Trifoliata*, *Epilobium angustifolium*, *E. hirsutum*, *Lythrum salicaria*, *Valeriana officinalis*, *Iris pseud-acorus*, *I. foetidissima variegata*, very ornamental, *Caltha palustris* and its double variety, *Lysimachia vulgaris*, *Arnica montana*, *A. donax versicolor* (the last two should have a sheltered position), *Myosotis palustris*, *M. caespitosa*, *Silthorpa europaea* (for covering moist shady rocks, if any), *Carex Davalliana*, *C. dioica*, *C. pulicaris*, *C. pauciflora*, *C. paniculata*, *Cardamine pratensis*, and its double variety.

DIONÆA AND SARRACENIA CULTURE (*A Subscriber*).—The *Dionæa muscipula* succeeds best in a pot well drained, indeed half filled with crocks, and in a compost of fibrous brown peat two-thirds, and one-sixth each of pieces of pot broken small and sphagnum, using a little fresh moss for surfacing the pot. Place the pot in another of larger size, so that both rims may be on one level, and fill the space between them with moss, setting the pot in a saucer kept full of water. A bell-glass is placed over the plant so as to rest on the moss between the pots, but it should be kept from fitting very closely down by two or three pieces of thin char-

coal or wood, so as not to exclude air. The soil or compost should be kept moist. The temperature should be from 45° to 50° in winter, and from 60° to 80° in summer. Place the plant near the glass. The *Sarracenia* succeed in a greenhouse, but should have the coolest part, and they should have the closest and moistest position—indeed they are best grown in a cold frame in summer. They are best grown in pans or shallow pots half filled with crocks for drainage, and the remainder a compost of one-half fibrous peat, one-fourth chopped sphagnum, and one-fourth charcoal in pieces not larger than a hazel nut, small crocks, and silver sand, the whole well mixed. Surface the soil in the pots with a little fresh sphagnum, though that is not material. The plants should be lightly sprinkled overhead twice a-day in summer, admitting air in moderate quantity, but not so as to dry the foliage too quickly, and give it early in the morning. Shade for a few hours during the hottest part of the day. They merely require protection from frost. Keep them very moist when growing, but when at rest it will be enough to keep the compost moist, and a drier atmosphere should at that time be maintained.

REMOVING SHRUBS (*W. S. N.*).—A tenant of a garden, if not a nurseryman, cannot legally remove shrubs he has planted in its soil.

HEPATICAS (*S. L. Mayes*).—They are not invariable coloured, and we should call them light purplish blue.

PLANTS ON ROCKWORK NOT SUCCEEDING NEAR HOT-WATER PIPES (*Worcester*).—The evaporation-troughs placed over the pipes as proposed would not render the rockwork near them more suitable for the growth of either Ferns or Mosses, and the water would not be suitable for the growth of either Ferns or Mosses, for they are not aquatic, and it would not be suitable for water plants. The house being kept at greenhouse temperature would not be benefited by placing evaporation-troughs on the pipes, for they are of little value in houses having no artificial heat except in cold damp weather and periods of severe frost, when the moisture evaporated from the troughs on the pipes would be more injurious than beneficial. The slabs of wood placed on the floor and leaning against the rockwork, and covered with *Platycodon* (*Acrostichum*) *alacorne*, would do tolerably well, as we have proved in a similar position, but the plants must be well supplied with water daily when the pipes are hot. Could not the pipes be placed at a greater distance from the rockwork? There is no aquatic Fern. Pitcher-plants succeed in a house having a winter minimum temperature of 60°, and the New Holland Pitcher-plant (*Cephalotus follicularis*), may be grown well in a warm greenhouse or vinery.

CULTURE OF DRACENAS AND CROTONS (*Dracena*).—The former are the hardest, and most of them will succeed in a warm greenhouse—that is, in one the temperature of which is 50° at night, or occasionally 45° in very frosty periods; but the plants ought to have no more water than enough to keep the foliage from flagging. The only secret for having the foliage well coloured is to afford the plants a light position, placing them as near the glass as practicable. Give them a moderate amount of air, with a moist brisk heat, avoiding wetting the foliage, or rather do not

allow the sun's rays to fall powerfully upon the leaves whilst wet, as they are then apt to spot and brown. The *Crotons* will also succeed, but they must have the warmest position, and they should not be exposed to strong light, nor have too much room. They should have a moist atmosphere when making new growths, and a plentiful supply of water. The summer temperature should be from 60° to 65° at night, and from 70° to 75° by day without sun, and from 80° to 85° or 90° with sun and air.

CREAK WARNING (*Parson*).—Where such worn-out wrought-iron nozzles to blast furnaces can be obtained and used as boilers, of course no other boilers can enter into competition with them as respects cheapness, and therefore the hint, as you say, is a good one as respects our artisan classes, or other classes, too, who make economy an object. The boiler thus formed must cost almost nothing, when 2 feet as a flow and 2 feet as a return can be fixed to this nozzle boiler, and all cost 4s. 6d. We admire the simplicity of fixing the boiler, but any other boiler could be fixed in a similar way.

FRUIT TREES DYING (*A Constant Subscriber*).—The laterals enclosed were quite dead, and for such as these there can be no recovery. If the trees break farther back there may still be hope; if not, there will be little hope; but we have had Peach-tree twice as much dead as yours, and still the trees came round and produced new shoots. We have a tree in a pot that looks very much like yours as respects the young shoots, but strong waters injured the roots. As you seem to have so little growth, we would hint that probably the want of water, or improper water, last season might be the cause; or have you been using Gishurst or some other composition too strong, and thus killed the young shoots?

GROWING SEEDLING PELARGONIUMS (*Le Veau d'Or*).—We have often flowered *Pelargoniums* the first year, and there is very little difficulty in doing this if the plants have proper treatment. The only thing to be done is to grow them as rapidly as possible as soon as the plants are large enough to handle, and their tops should not be pinched out. They must also be kept as near the glass as possible. As soon as the plants are a foot high water should be given sparingly, in order to check the growth of the plant and to ripen its wood. If the seeds were sown in autumn or in the first week of January, and the plants have been properly treated, they will by the end of May have attained the height given above. They should now be placed out in the sun, and be watered regularly, when they will soon show signs of flowering. A cucumber frame is not by any means a good place to keep them in; a greenhouse, stove, or vinery is very much better during their growing season. A temperature of 60° to 70° is more suitable to cause a quick growth. They would be sure to damp off in such a low temperature as that you name. The leaves you sent are neat, but not novel; we have many like them.

VERBENA CUTTINGS.—We have inquired relative to the not sending cuttings for postage stamps enclosed. The head of the firm states that the demand exceeded the supply, and that the postage stamps will be returned.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 6th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 31	29.797	29.757	51	28	42	40	N.E. §	.00	Overcast and cold; cloudy; clear and fine at night.
Thurs. 1	29.865	29.824	50	21	42	41	N.E.	.00	Fine and frosty; cloudy but fine; fine, very mild.
Fri... 2	29.759	29.551	52	36	41	41	S.W.	.08	Fine; cloudy, fine; densely overcast at night.
Sat... 3	29.451	29.311	48	33	45	41	S.W.	.04	Very fine; densely overcast; overcast, very damp.
Sun... 4	29.369	29.508	49	24	44	42	N.	.00	Clear and fine; overcast and cold; fine, starlight.
Mon... 5	30.111	30.041	55	41	45	42	W.	.00	Very fine; cloudy but fine; overcast, heavy clouds.
Tues.. 6	30.061	29.904	50	46	45	42	W.	.24	Fine, very mild; rain; overcast, heavy showers.
Mean	29.850	29.699	50.71	32.71	43.43	41.29	—	0.36	

POULTRY, BEE, AND PIGEON CHRONICLE.

EAST INDIAN WILD BREEDS OF POULTRY.

(Continued from page 232.)

THE brown-legged variety of *Gallus ferrugineus* was probably once found wild in all the countries round India, in the then wooded tablelands of the districts north of the Peninsula, where snow or frost is nearly unknown in the winter, and they gradually disappeared as the wooded districts were as gradually cleared by the increase, spread, and industry of the human race; and their descendants retained by the inhabitants have been bred to a larger size and a greater variety of colour in a state of domestication in these countries. The original type is, therefore, now only to be found in the wooded parts of India and its islands, but here they are yellow-skinned and yellow and willow-legged; whereas in their northern habitats, (which might have extended as far to the north as Asia Minor is, the wild Pheasant, a bird not harder than the *Gallus ferrugineus* is, was once found there), they were probably all of the brown-legged and white-skinned variety. In Persia they may have been once known, from which country, or the borders of it, history tells us that our Saxon ancestors, then called the "Sassi," migrated to Germany. It is clear, however, that our common farmyard fowls did not originate from the yellow-skinned wild birds, but from white-skinned originals, which seem to have been the more northern variety of the two.

The species that some term the *Gallus ferrugineus* major is thus mentioned by some naturalists, and, I think, by Sir Wm. Jardine also, as follows:—"There is another rather larger species of the Jungle fowl strongly resembling the species just described, and, in fact, identical with them, but yet sufficiently distinct for the difference to be noticed. These have yellow legs, bills, and feet, and often small, thick, or thickish combs, and are rather larger and stouter in limb than the more common wild type, which has the darker legs and bill, and is always single-combed with dusky greenish legs and feet." There is no very great difference in size between them, but the yellow-legged species is rather the heavier and larger of the two almost invariably, and appears to have been more the original type of the common Indian breeds in domestication, and capable of producing larger breeds of the domesticated sorts than the more common and smaller species, being the probable original of all the larger yellow-legged breeds so common in India, as their yellow legs could never have been produced by any amount of domestication from the smaller dark-legged breed; but our white-legged and blackish-legged common fowls in England, no doubt, first came from the brown-legged wild birds, which have legs much the colour of our Pheasants and English Partridges. The yellow and willow-legged yellow-skinned breeds are, undoubtedly, of pure East Indian origin, while all the other colours of legs with white skins come from the brown-legged white-skinned wild Gallinae, found once to the north of India.

The average weight of the cock of the *Gallus ferrugineus* is from 2 lbs. to 2½ lbs., generally about 2½ lbs., or a little over, but the yellow-legged larger species, I have heard, has been found in the cocks to attain 3 lbs. at times, this being about their extreme weight. The red colour of the cocks in the Jungle fowl is not so red as in our Black-breasted Red Game, and more inclines to either a brownish or a yellowish red, and the hens are of a more earthy brown than our Partridge hens are in general. There are five shades of colour as stated before. Black-breasted Reds and Ginger Reds, willow and yellow legs and red combs, brown and light brown hens; Gingers, yellow and light willow legs, yellowish combs, light ginger brown hens; and Brown Reds and Ginger Brown Reds, dark greenish legs, and gipsy combs, with dark or dusky earthy-brown hens, and no further description of them is necessary. The word "Bankiva" applies to Java only, not to India, and the correct general name is the *Gallus ferrugineus*, or Red Brown wild Jungle fowl of the East Indies and its islands.

Our Game fowls and Game Bantams are clearly the nearest direct descendants of these Jungle fowl, together with the East Indian Game fowls, as no other breeds so closely resemble them. The *Gallus furcatus*, from having the unerrated unlobed comb and single wattle, must, I think, certainly be a descendant of the *Gallus aeneus*, crossed, perhaps, with both the *Gallus Sonnerati* and *G. ferrugineus*, but certainly with the former, to get the dun breast, which both *G. Sonnerati* and *G. furcatus* have in common, and the *Gallus aeneus* and *furcatus* have the peculiar comb and wattle in common also. It appears to me quite probable that South Persia, Afghanistan, and south Asia Minor once had wild Jungle fowl of the brown-legged white-skinned sort in the once wooded district there, which have, of course, gradually become extinct as the country became cleared.

Most poultry books describe the *Gallus bankiva* or *ferrugineus* as of only one colour and one size. This is, I think, too general a description, as five shades of colour are found in them on close observation, and there are also two sizes, though not differing greatly as to size. The late Mr. Brent's theory, that the Duckwing Game fowls of England were the descendants of the *Gallus Sonnerati*, I think is quite erroneous, as our Duckwings are known to have been produced from our Black-breasted Reds, which undoubtedly descend from the *Gallus ferrugineus* or *Bankiva*, and the difference of the structure of feathers in the cock of the *Gallus Sonnerati*, and absence of comb and wattles in the hen clearly demonstrate against Mr. Brent's theory. Our Game fowls, however, may have been produced by the mixture of all the four or five wild species, but by far the most resemble the *Gallus ferrugineus*, which must be accounted their originals, as well as the direct originals of all our dark-tailed Red breeds of Game fowls. In the hens of the Black-breasted Red, Ginger Red, and Ginger shades of colour of this bird, yellow shafts in the feathers of back and wings are discernible in general, but not in the hens of the two darker shades of colour.

The idea that no country except India ever had any wild breeds of poultry at any time, is, I think, erroneous, as all the wooded southern countries of Asia may have once possessed their wild breeds, which, as the population increased and the country became cleared and settled, either died off or were brought into a state of domestication by slow degrees, and then gradually increased in size and varied in colour, from the original red brown type of their wild originals once there found. In South America wild Jungle fowl are said to have been found by travellers, but most people consider these to have been the small South American Pheasant, called there the "Chiacallaca," but it has been positively stated by old travellers in the districts near the Amazon and in the Brazils, that they have heard the crowing of the wild Jungle cocks there.

The hybrids between the *Gallus ferrugineus* and the other wild sorts in India are in general believed to be sterile, and this, if invariably true, would mark the *Gallus ferrugineus* as the only original species, or only true progenitor of our English breeds. Our common breeds in England, if ever wild in their original type, were probably wild in the upper and wooded table lands of southern Asia, and not in India. It is not, however, quite certain that our English breeds may not be derived from the mixture of two or more *once* wild breeds, though the sterility of the known hybrids militates against this. The theory of old poultry books that the supposed wild *Gallus giganteus* was one of the two original sorts with *Gallus Bankiva*, appears to have become exploded now, as no record at all exists of so large a breed as this ever having been found

in a wild state at any time, and probabilities are against such ever having been the case.—TREVOR.

FEATHER-EATING FOWLS.

NONE of your correspondents can have had their hens denuded of feathers worse than mine were for some years. After many ineffectual attempts I at length discovered the cause; and though it is impossible for any fowls to be in better plumage than mine always are now, I can at any time make them as bad as ever by giving them scraps of meat; too many worms have the same effect. Mine are confined in a very small space, but are in good health and lay well; I refer to Houdans and Spanish only. Brahmans and other sorts have no such bad habits.

I have eleven pullets now laying which I hatched in an incubator, and they began in December. The Houdans were seven months old.—AN ENTHUSIASTIC AMATEUR.

An old hen of mine last autumn took to feather-eating. She was especially fond of the soft rump feathers, and when she had cleared these all off she devoted her attention to those of the neck. Only three or four hens in the run were thus treated. I do not know why she spared the others. In order to break her of the habit I took her away from the others, and placed her under a coop for a while; when returned to the run she was received as a stranger, the hens treating her to a taste of their bills instead of their feathers, and thus she was cured of her propensity.—M. S.

PRODUCE OF EGGS.

I SEND you an account of the eggs produced by my poultry during March, the stock comprising thirty hens—namely, three Buff Cochins, four Houdans, thirteen Hamburgs, ten half-bred. They laid in the month 466 eggs; the hens have been fed upon stewed rice mixed with bran and Indian corn. During the first eight days of the month they laid only sixty eggs, or seven and a half per day; but since that time 406 eggs in twenty-three days, or about seventeen and three-quarter eggs per day.—C. B., Warrington.

ACCRINGTON POULTRY SHOW.

THIS was held on the 1st and 3rd inst. The following were the awards:—

GAME (Black or Brown Reds).—1, H. M. Julian, Hull. 2, C. W. Erierley, Middleton. 3, W. Gilliver, Tamworth. *hc*, L. Biney, Manchester; E. Aykroyd, Bradford; W. Gilliver.

GAME (Any other variety).—1, W. Gilliver. 2, B. Jarvis, Mansfield. 3, E. Aykroyd. *hc*, C. W. Erierley; G. & C. Furness, Accrington.

DORKINGS (Any colour).—1, J. Stott, Henley. 2, J. H. Moffat, Rochdale. 3, T. Bryden, Earby, near Skipton. *hc*, H. Pickles, Earby, near Skipton; J. Partington.

COCHINS (Buff or Cinnamon).—1 and 3, W. A. Taylor, Manchester. 2, H. Maplebeck, Woodfield, Mosley, near Birmingham. *hc*, J. G. Broxop, Burnley.

COCHINS (Any other variety).—1, W. A. Taylor. 2, T. & C. Haworth, Henfield, Haslingden (White). 3, W. Harvey, Sheffield. *hc*, T. Stretch.

SPANISH (Black).—1 and 2, F. & C. Haworth. 2, H. Beldon. *hc*, T. C. and E. Newbitt, Epworth; H. Wilkinson, Earby, near Skipton; W. & F. Pickard, Thorne, near Leeds. *c*, J. T. Sykes, Rochdale.

BRAHMAS (Any colour).—1 and 2, E. Leech, Rochdale. 3, C. W. Erierley. HAMBURGHS (Golden-pencilled).—1, J. Walker, Knarsborough. 2, H. Beldon, Goustock, Bingley. 3, H. Pickles. *hc*, H. Beldon.

HAMBURGHS (Silver-pencilled).—1 and 2, H. Beldon. 3, H. Pickles. *hc*, J. Walker; J. Smith, Openshaw Iron Foundry. *c*, Mason & Walker.

HAMBURGHS (Golden-spangled).—1, H. Beldon. 2, J. Walker. 3, N. Marlor. *hc*, W. McMellon, Glossop; N. Marlor; J. Newton, Silsden.

HAMBURGHS (Silver-spangled).—Cap for best pen of Hamburgs, J. Fielding, Newchurch, near Manchester. 2, J. Fielding, Newchurch, Rosendale. 3, H. Beldon. *hc*, H. Beldon; W. A. Taylor.

HAMBURGHS (Black).—1, D. Lord, Stacksteads. 2, N. Marlor, Denton, Manchester. 3, Mason & Walker. *hc*, Rev. W. Serjeantson, Acton Burnell; J. Smith, Openshaw, near Manchester.

FRENCH FOWL (Any variety).—1, W. R. Park, Abbott's Meadow, Melrose (Cuvée-Cœur). 2, W. Harvey, Sheffield. 3, L. Biney. *hc*, E. Leech.

POLANDS (Any colour).—1, W. Harvey. 2 and 3, H. Beldon. *hc*, J. Heath, Nantwich, Cheshire. *c*, J. Partington, Bury Lane, Leigh.

ANY OTHER VARIETY.—1, R. Loft, Woodmansey, near Beverley (Sultans). 2, R. Loft, Woodmansey, near Beverley (White Sultans). 3, J. Hinton, Hinton, near Bath (Malay).

SELLING CLASS (Any variety).—1, C. W. Erierley. 2, J. T. Sykes, Rochdale (Spanish). 3, W. A. Taylor. *hc*, H. Hargreaves, Burnley (Black Reds); J. Berry, Silsden (Spanish); E. Greenhalgh, Middleton; G. & C. Furness (White Sultans).

GAME BANTAMS (Black Reds).—1, J. W. Norris, Rochdale. 2, L. Biney. 3, W. F. Entwistle, Leeds. *hc*, W. Griffiths, Nantwich.

GAME BANTAMS (Any other colour).—1 and 2, T. Sharples, Rawtenstall. Extra 2, J. G. Pearson, Market Drayton. *hc*, G. Birtwistle, Haslingden; J. R. Robinson; L. Biney; Bowman & Fearon, Whitehaven (Pile Game); C. W. Erierley.

BANTAMS (Any variety except Game).—1, S. & R. Ashton, Mottram

(Black). 2, H. Yardley, Birmingham. 3, S. S. Mossep, Long Sutton. *hc*, H. Beldon (Scotch Greys); M. Leno, Dunstable (Gold-laced); W. Brotherton, Isle, near Leeds; T. C. Harrison, Hall.

TURKEYS.—1, E. Leech. 2, T. Statter, Standhill, Whitefield. 3, Bary and Rhodes, Accrington.

GESE.—1, E. Leech. 2, J. Lancaster, Dinley, Cliviger. 3, J. Hubbersly, Longridge, near Preston. *hc*, T. Houliker, Revidge, Blackburn; W. Baxter, Waterfoot, near Manchester; T. Statter, jun., Whitefield, near Manchester.

DUCKS (Aylesbury).—1, T. Houliker; 2, E. Leech. 3, H. Dean. DUCKS (Roe).—1, J. Stott, Quarry Hill, Rochdale. 2, E. Leech. 3, T. Houliker. *hc*, T. Houliker; J. Hilton, Double Cop, Pennington.

DUCKS (Any other variety).—1 and 3, C. W. Brierley. 2, A. & J. Trickett, Waterfoot, Rossendale. *hc*, S. & R. Ashton, Mottram; N. Marlor, Denton, near Manchester; C. W. Brierley.

ANY VARIETY (Except Game and Game Bantams, within three miles of Accrington).—1, W. G. Holt, Bridge House, Church. 2, G. & C. Furness. 3, J. Hargreaves, Lodge Terrace, Church.

SINGLE COCKS.

GAME (Any colour).—1, W. Gilliver (Black Red). 2, C. W. Brierley. 3, H. M. Juliao. *hc*, L. Biney; H. M. Julian; W. Perrie, Nantwich; C. W. Brierley. *c*, P. Catterall, Uplands, Preston (Duckwings).

GAME (Within three miles of Accrington).—1 and 3, G. & C. Furness. 2, Eastwood & Hindle, Accrington. *hc*, G. & C. Furness; W. Morris, Accrington.

GAME BANTAM (Any colour).—1 and 3, W. F. Entwistle (Black Red). 2, C. W. Brierley. *hc*, J. W. Morris, Rochdale; M. Bormphrey, Liverpool; W. H. Buckley, Accrington (Black Red); W. F. Entwistle (Black Red). *c*, J. R. Robinson, Sunderland.

GAME BANTAM (Within three miles of Accrington).—1, 2, and 3, W. & H. Buckley (Black Red).

PIGEONS.

CARRIERS.—1, E. Horner, Harewood, Leeds. 2, J. Hawley, Bingley, Yorkshire. *hc*, J. Chadwick, Park View, Bolton; E. Horner. *c*, H. Yardley, Birmingham.

TUMBLERS.—1, H. Yardley. 2, J. Fielding, jun., Rochdale. *hc*, T. C. and E. Newbitt, Epworth, Lincolnshire; J. Fielding, jun.

BARNS.—1, J. Fielding, jun. 2, J. Fielding, jun., Lark Mills House. *hc*, H. Yardley; J. Hawley.

OWLS.—1 and 2, J. Fielding, jun. *hc*, J. Hawley, Bingley; J. Chadwick, Park View, Bolton.

POUTERS OR CROPPERS.—1, J. Hawley. 2, E. Horner. *hc*, W. Harvey, Sheffield; E. Horner. *c*, J. Hawley.

FANTAILS.—1 and 2, J. Hawley. *hc*, H. Yardley; T. C. & E. Newbitt; E. Horner.

TURBIDS.—1 and 2, E. Horner.

DRAGONS.—1, W. Harvey. 2, E. Horner. *hc*, H. Yardley; D. Bromley, Over Hulton, near Bolton; T. Charnley, Blackburn.

TRUMPETERS.—1 and 2, J. Hawley. *hc*, E. Horner.

JACOINS.—1 and *hc*, E. Horner. 2, J. Hawley.

NUNS.—1, H. Yardley. 2, A. A. Vander Meersch, Forest Hill.

ANTWERPS.—1, E. Horner. 2, W. Harvey. *hc*, H. Yardley; J. Hawley.

ANY OTHER VARIETY.—1, E. Horner. 2, H. Yardley. *hc*, J. Hawley; H. Yardley; Kenyon & Riley, Accrington (Magpies); T. C. & E. Newbitt; J. & W. Kitchen (Black Magpies); E. Horner.

ANY OTHER VARIETY (Within three miles of Accrington).—1 and 2, H. Maden, Church (Black Carriers).

JUGES.—*Poultry*: Mr. Thomas Chaloner, Barlboro', Chesterfield; Mr. Simon Fielding, Treotham Park, Stafford. *Pigeons*: Mr. Henry Beldon, Goitstock, Bingley.

BUTTER AND EGGS FROM FRANCE TO ENGLAND.

THE butter and eggs exported from France to England have largely increased since the treaty of commerce came into operation. Thus, in the years 1857, 1858, and 1859, the value of the French butter exported to England averaged £132,480 per annum. In 1865, the corresponding value was £1,867,080; in 1866, £2,276,480; and in 1867, £2,265,160. The value of the eggs exported from France to England averaged £293,560 per annum in 1857, 1858, and 1859. In 1865, the value was £850,960; in 1866, £1,010,960; and in 1867, £889,640.

RABBITS EATING THEIR YOUNG ONES.

I READ with much interest the replies to "H. A. J.," as to giving water to Rabbits, but could not see that they confirmed your remarks that a doe only eats her young when suffering from thirst. I have several does under my care, and, like "H. A. J.," have given them a saucerful of water a-day—and yet one always eats her young. I believe when Rabbits take to that the only remedy is to break their necks. I should certainly do so were the doe my own.—A. FOREMAN.

[The doe you mention is a cannibal and should be killed. A good supply of water usually prevents the habit being acquired.—EDS.]

APIARIAN GLEANINGS.

THE CENTRIFUGAL HONEY-EXTRACTING MACHINE. — This machine appears to be coming into very extended use both in Germany and America, and wherever it has been fairly tried its employment has been attended with most favourable results.

Mr. Lee, of Windlesham, Surrey, is, I believe, the principal, if not the only, manufacturer of these machines in England,

and I have now before me a letter from a gentleman who speaks most favourably of one which he purchased from him. There can be no doubt whatever that the production of honey in this country might be almost indefinitely increased by the use of these machines, and that they require only to be better known and understood to bring them into general use amongst us.

LIGURIAN BEES.—At a recent meeting of Hanoverian beekeepers at Celle, Mr. Lehzen, who had all along professed to regard the Italian bees as in no respect superior to the common kind, stated that he had been induced to change his mind by observing that a rape field situated at a great distance from any apiary was visited exclusively by Italian bees—thus demonstrating that these enjoyed a wider range of flight than other bees, and could consequently command greater and more diversified resources.—A DEVONSHIRE BEE-KEEPER.

HEATHER HONEY HARVEST.

THE various accounts of the honey harvest that I have read in THE JOURNAL OF HORTICULTURE, since I wrote on the Northumberland flower honey harvest, induce me to send you a short report of the Northumberland heather honey season of 1868.

My party went out on July 27th, a fortnight earlier than formerly, and they might have been a week sooner, for we found the heather in fine bloom and a few hives, out before us, to all appearance doing well. The taking-out continued for a week after, and, as I predicted, the usual stands were far from being filled up on account of the bad swarming season which was general all over Northumberland. Many considered the heather too dry for a time to produce much honey, but the end of the season was too wet, which circumstance brought the labours of the bees to an early close.

On the 31st of August my party drove off to bring home the bees. After a twelve-miles drive we halted at a roadside inn to rest and feed our horses, before encountering the three miles of fell which lay between us and our stand, and having to pack bees for a fifteen-miles drive home over rough and hilly roads with our precarious cargo in the dark. All out-goes inquire at the above inn, What news from the moors? as here the returners discuss the merits of the season, of the various stands, and especially which individual has the best hives, &c. Here I was informed that a few supers had reached nearly 30 lbs. weight, but that the majority were badly filled, though the skeps would make good keepers. On arriving there I found the above statement generally correct, but had no supers with more than 8 or 10 lbs. of half-filled and half-sealed comb. We consider a super of 20 lbs. weight good at the moors.—GEO. WILSON, Whalton.

OUR LETTER BOX.

WILD RABBITS (*Ignara*).—They will not injure the pasturage, they will eat some of the grass. Cows do not refuse to graze after them, for the first shower of rain removes all impurities.

RABBITS (*Amateur*).—We recommend you to obtain Andalusians. They are very large.

ANGORA RABBIT (*Cuniculus*).—The "lump," as you call it, is characteristic of the variety. If a Rabbit has not the "lump" it is not an Angora.

HAIR FALLING OFF YOUNG RABBITS (—).—They are attacked by what fanciers call scurvy. Give them a little flowers of sulphur in a little milk night and morning. Many are so affected when their second coat of hair comes.

CANARY EGG-BOUND (*A Beginner*).—"I certainly should not have attempted to force the egg from the hen, and am of opinion that, ill as she appears to have been, she would have passed it next morning. She may, and indeed must have been, in a very exhausted state, but evidently had sufficient vital energy in her to stand a most delicate surgical operation. I prefer a vapour bath to immersion, using a jug with a narrow neck nearly full of boiling water. Hold the bird over this, resting the tail on the edge of the neck of the jug, so as to expose the vent to the full action of the steam. Never mind its feeling uncomfortably hot to the hand—it will be more so to the delicate skin of the bird. Hold it there till the parts appear softened; then inject one or two drops of oil, and place the hen gently in her nest. If the egg be not soon passed repeat the operation, prolonging the exposure to the vapour bath, and continue to do so till relief be obtained. In nearly every instance this treatment will prove successful, and in obstinate cases I should feel disposed to continue it hopefully, even till death supervened, rather than resort to such measures as artificial delivery of the egg. I would caution 'BEGINNER' against mistaking a real case of egg-bound for that great physical prostration which sometimes accompanies the egg-developing process in certain of its stages. It usually sets in during the afternoon a day or two before the laying of the first egg, sometimes the day before, and might easily be imagined to result from the non-laying of an egg at its proper hour, when in fact it is nothing of the kind, but a complete and utter prostration arising from other causes. She becomes apparently 'too much exhausted to live long in such pain.' The symptoms I have described in previous numbers. Suffice it to say that if left to nature you will, instead of finding the hen dead next morning, find her the picture of robust matronly health, and in all probability lay an egg also.—W. A. BLACKSTON."

CANARY ASTHMA (*C. A. J.*).—The great curative agent is warmth. But the birds suffer usually from severe cold rather than from asthma proper. We have no information on the subjects of your other inquiries.

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 15—21, 1869.	Average Tempera- ture near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	s.
15	Th	Meeting of Royal and Linnean Societies.	58.2	37.8	48.0	21	7 af 5	54 af 6	8 af 7	33 10	3	0	2
16	F		57.3	36.8	47.0	27	5 5	55 6	45 7	37 11	4	0	17
17	S	Royal Horticultural Society, Second Spring	58.1	35.9	47.0	15	2 5	57 6	29 8	morn.	5	0	31
18	SUN	9 SUNDAY AFTER EASTER. [Show.	56.8	35.9	47.3	16	0 5	59 6	20 9	37 0	6	0	45
19	M	Meeting of Royal Asiatic Society, 3 p.m.	59.0	35.4	47.2	9	58 4	1 7	23 10	28 1	7	0	58
20	Tu	Royal Horticultural Society, Fruit, Floral,	60.3	34.8	47.6	16	56 4	2 7	32 11	14 2	8	1	11
21	W	Meet. of So. of Arts. [and General Meeting.	59.4	37.0	48.2	15	55 4	4 7	after.	53 2	9	1	24

From observations taken near London during the last forty-two years, the average day temperature of the week is 58.2°; and its night temperature 36.2°. The greatest heat was 77°, on the 18th and 19th, 1851; and the lowest cold 20°, on the 15th, 1862. The greatest fall of rain was 0.56 inch.

CULTURE OF KENTISH ORCHARDS.

TAKEN in its simplicity, as it undoubtedly is by those persons who grow fruit for the markets, fruit culture at once resolves itself into a question of profit and loss. No issue can be more simple than this, at the same time none can be of greater importance. Assuming this reasoning to be correct, it might be thought that the method of fruit culture, the results of which appear to be most conducive to the desired end, would at once command universal adoption, but this is not generally the case; on the contrary, in this matter at least, most fruit-growers are decidedly conservative, and not without good cause, for it is no light matter to undertake the formation of a plantation of fruit trees. If a man is at all advanced in years, and is but a tenant, or even a leaseholder, he is apt to take things very quietly as regards carrying out what might be considered to be necessary improvements, such as removing worn-out trees which give but half a crop, and replacing them with improved forms and kinds. It is, therefore, to the freeholder, who, if he reap but little benefit himself, yet may reasonably hope to leave behind him an improved estate for his descendants, that we must look for an interested, and in many cases, an intelligent application of modern improvements.

Although the standard fruit tree is, without doubt, the worst of all forms, yet it must be granted that there is something very attractive in the old farmhouse, with its quaint gables and many-paned windows, just visible through the orchard of huge old trees, whose enormous heads may occasionally be seen in favourable seasons laden with twenty or more bushels of fruit, telling of cider-making, and, too often, of acid treats for the pigs; for the crop of standard fruit trees is more exposed to the action of the elements than that obtained by any other method of training. The blossom is very apt to suffer from the action of cold cutting winds, but it is when the fruit approaches maturity that high winds so often prove fatal to the crop. Last season was a bad one in this respect. Stormy winds were very prevalent just at the time when the fruit had attained its full growth, and yet was not ripe enough to be gathered. In one instance, an extensive purchaser of fruit on the trees on one fatal Saturday had several hundred bushels of Apples blown down, and he was glad to sell them at the rate of a few pence per bushel. Nor does the mischief caused by the wind end here, for the greater part of the fruit which remains on the trees receives so many contusions during the storm, that the experienced fruiterer knows full well how vain would be any attempt to keep it, and it is, consequently, pushed into the markets very soon after it is gathered: hence the oft-repeated exclamation of the buyer, "How badly Apples keep this year." A glimpse of first causes is not always to be had, but when it is, what a light does it generally throw on the subject! As the crop of the standard tree so frequently suffers, so we find dwarf trees obtaining a more general adoption, and it is to some very interesting and successful results in the

culture of dwarf trees obtained by my neighbour, Mr. Edward White, that I wish to call attention.

Part of the parish of Egerton is situated on that ridge or eminence formed of irregularly-deposited strata of limestone, or Kentish ragstone, and clay, which runs for some miles through Mid-Kent, and from which such magnificent views over the wide-spreading undulations of the Weald, onwards to the uplands of Sussex and Surrey in the far distance, are to be had. Along some parts of this eminence abrupt declivities may be seen where the descent is almost perpendicular, and it is at these points that the irregularity of the strata is perceptible. The greater part of the descent, however, is not so abrupt, but is very gradual indeed, and forms a sunny bank sloping gently down to the south-west. On a part of this fine natural position for fruit-culture Mr. White's freehold is situated, and he, with a ready appreciation of the excellence of the situation, has planted part of it with fruit trees.

The soil of this orchard, which is particularly interesting, may be divided into three distinct kinds:—The upper part, originally forming part of a quarry, or rock hole, since filled up, consists of a mixture of loam, sharp gritty rock earth, and shattery rock; the next, or middle part of the slope, is of a pure deep loam, which gradually becomes more and more shallow till the lower or third division is reached, where we find the stiff, cold, Wealden clay. Thus it will be seen that in this orchard of about 2 acres we find fruit trees growing side by side in three different soils, and what adds very much to its interest is that a few trees of the same kinds of Apples are planted in all three soils, with what results I shall presently tell.

The orchard at the present time consists principally of standard and dwarf Apple trees, planted in rows 20 feet apart; these rows run longitudinally from the top to the bottom of the slope (a distance of 350 feet), and they are thus planted:—It is intended eventually to allow the dwarf trees to occupy the whole of the space; they are, therefore, planted 20 feet apart all down the rows; the space between the dwarfs in the rows is planted with a standard tree in the centre, or 10 feet from either dwarf, and a Gooseberry bush is likewise planted between each standard and dwarf. As I have before stated, these longitudinal rows are 20 feet apart; this space of 20 feet is occupied by two other rows, placed at equal distances, and consisting entirely of dwarf Gooseberry bushes. As the dwarf Apple trees require the space, the whole of these bushes, together with the standard Apple trees, will be gradually removed. The alleys, or spaces between the rows, are annually dug, and a row or two of Potatoes, or some other root crop, taken.

The whole of the Apple trees are of Mr. White's own raising. The stocks were obtained by sowing the kernels of any sorts of Apples which came to hand, and they were grafted as they became stout enough. The greater part of the trees are seventeen years old, dating from the grafting year, and they have been planted in their present position fourteen years. The treatment of these trees has been of the simplest description, for Mr. White makes no pretension to a profound knowledge of the science of pruning or training; his object has been simply to obtain healthy

fruitful trees; and certainly no one can see the splendid specimens of dwarf trees growing here without at once feeling convinced he has fully succeeded. The pruning knife has in this instance had but very little to do with the matter, for the whole of the pruning amounts to just keeping the centres of the trees clear, to shortening the leading shoots for a year or two in order to obtain enough shoots to form a handsome head, and to regulating the side branches as they become too crowded. The results of this very moderate pruning are that the trees have grown to a large size quickly, and as their vigour received little or no check from the knife, a tendency to produce strong wood rather than much fruit was perceptible for the first five or six years, when fruit began to appear in such quantities as to offer considerable returns.

The development of the fruiting properties of such trees is very interesting, some kinds exhibiting a tendency to produce fruit much sooner than others; for instance, a Calville Malinagre will become fruitful much sooner than a Blenheim Pippin, and a Court-Pendu-Plat will be cropping heavily, while a Red Astrachan of the same age will afford but an occasional glimpse of its beautiful fruit, the high colour of which offers such a pleasing contrast to the deep green of its foliage. But although the production of fruit may be slower in some instances than in others, yet it most assuredly acquires an increasing development in all kinds year by year, as the trees advance in age; and as the fruit is produced more and more abundantly until it attains the proportions of a full crop, so surely does the annual wood growth diminish; and this rule holds good equally in the highest branches as amongst the lowest side shoots. In looking at the trees lately, I noticed that the growth of last year, with but few exceptions, did not exceed 9 inches in length, while nothing could appear more vigorous or healthy than the majority of the trees, the bark presenting that clean ruddy appearance which is indicative of a high state of health.

Additions have from time to time been made to the number of the trees, and consequently to the size of the orchard, but it is to the original part only that these notes refer. One tree which I measured, as being of a fair average size, was 16 feet in diameter, and quite as much in height. Some of the trees are larger than this. Observing a very vigorous standard growing in the clay, I was told it was a Blenheim Pippin, and that it was regarded as a curiosity. The Apple stock was planted in the position which the tree now occupies, and there grafted; a union between the stock and scion was quickly effected, and the graft grew to the height of 6 feet in the same year; its top was pinched off at this height at midsummer, and it then actually threw out several side shoots of sufficient vigour to form the base of the future head.

It was noticeable that but very few sorts were alike vigorous and healthy in all three soils, yet of Blenheim Pippin, Hanwell Souring, Red Astrachan, and Court-Pendu-Plat, fine specimens, equally vigorous and fruitful, may be seen growing in the heavy tenacious clay, the deep loam, and the mixed soil of rocky *débris* and loam. Most kinds thrive in the loam, but it is in the mixed gritty soil that the highest excellence is attained; the trees of all the kinds growing in this soil are everything that can be wished—the bark, without the least suspicion of lichens, is absolutely glistening with health, the growth free and healthy, and the crowded bloom buds abundant enough to satisfy even a Rivers.

One other result in connection with the soil worthy of notice, is that as we proceed from this favourable soil downwards to the clay, signs of lichens gradually appear, till in the clay itself mossy limbs are visible on all sides, thus proving that a cold, damp soil, even when free from stagnant water, as this is (for it is well drained), has a great influence on the production of lichens.

Of the kinds of Apples grown here, the most profitable are Winter Queening, Dumelow's Seedling, Northern Greening, Court-Pendu-Plat, Alfriston, and Hanwell Souring. Hanwell Souring is undoubtedly one of the best Apples for culinary purposes in cultivation; healthy, vigorous, very prolific, and most hardy, adapting itself to all treatments and soils, equally fruitful as a closely-pruned tree, or when its unpruned branches have in the very wantonness of vigour assumed a close resemblance to one of Nature's wild children, it may justly be called the winter kitchen Apple.

In concluding these remarks I would ask, by way of application, is not the question of profitable fruit culture worthy of greater attention from those persons whose land is favourably situated for this purpose? Perhaps to no part of the British Isles is this remark more justly applicable than to the south-

eastern counties of Kent, Surrey, and Sussex, where, owing to the undulating character of the land, many a sheltered sunny spot might be utilised for this purpose, and reared far more profitable to its owner than it would otherwise be. In the case before us we have land which, as arable or pasture land, for ordinary farming purposes produces an annual rent of 30s. per acre, but which, when planted with thriving fruit trees, assumes a value of at least £5, being even at such a rent a very profitable investment, if we take the annual returns, roughly estimated at about £30 per acre; and this sum is, I believe, quite within the mark.—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

TENDER ANNUALS.—No. I.

THESE are not numerous, but some of them are very ornamental in the greenhouse and conservatory in summer and autumn.

Probably the finest of the annuals requiring constant glass protection for their successful cultivation is the BALSAM, of which there are several varieties. Those known as the Camellia-flowered are, undoubtedly, the best, and of them there are several colours. It is useless to attempt the cultivation of Balsams unless seed of a good strain is procured; the best that I have grown are Smith's Camellia-flowered; the Rose-flowered Balsams are also good.

Balsams when sown too soon, and grown without sun, are apt to become drawn up, and have then a poor appearance. No place is so good as a frame for sowing the seeds, and this should not be done until the first week in April, making another sowing in May and one in June. A hotbed should be prepared in March, so that by the beginning of April it may have a bottom heat of 70° or 75°, and a corresponding top heat. The bed should be covered with tan or other plunging material, so that when the seed pots are plunged in the bed the surface of the soil will not be more than 6 inches from the glass. The seed ought to be sown thinly and evenly over the soil, the surface of which should be within half an inch of the rim of the pot or pan, and be made smooth by patting it lightly with the bottom of a small flower pot; then scatter fine soil over the seed so as to cover it. Give a gentle watering if the soil is not moist enough, and plunge the pots in the hotbed. In a few days the seeds will have germinated. As soon as the plants come up admit air freely, but the temperature must not be lowered below 60°. Care should be taken not to overwater, but still have the soil moist, so as to promote healthy growth.

When the plants are showing their rough leaves prick them off singly in 3-inch pots, placing at the bottom a lump of soil for drainage, and then so pot the plant that the seed leaves may not be more than 2 inches above the surface. The pots should be replaced in the hotbed, and if they are too near the glass sink them by removing a portion of the plunging material, or raise the frame, taking care not to have the plants farther from the glass than 6 inches—indeed, they cannot be too near it if they do not touch it and room is allowed for growth. As soon as the pots are filled with roots, and before these become matted, transfer the plants to 4-inch pots, potting so deeply that the seed leaves will not be more than 2 inches above the surface, and replace in the hotbed, sinking the pots in the bed, or, by raising the frame, allow room for growth. The heat must be kept up by linings, so as to be 55° or 60° at night, and 65° or 70° by day, with a rise from sun heat, admitting air freely, so as to keep the plants sturdy. When the roots are forming round the sides of the 4-inch pots shift the plants into 6-inch pots, and at this potting they should be again sunk in the soil, and so that there will not be a distance of more than 1½ inch from the surface to the seed leaves. Return the plants to the hotbed if the heat can be maintained, and if there is room for them to grow; if not they must have another hotbed, which should be in readiness to receive them. Those persons who have a light, airy house, with a night temperature of 60°, or not less than 55°, will not have any difficulty in meeting the requirements of the Balsam, there being a position near the glass and room for it to grow. The plants, if they are disposed to grow all on one side, must be turned round frequently.

They should be shifted into 8-inch pots as soon as the roots reach the sides of the pot, and this constant shifting will need to be persisted in until they are as large as required; but it is needless to keep on potting the plants, as they will not long continue in a growing state unless the flower buds be picked off. If large plants are required the flower buds must

be picked off as fast as they appear, commencing with the central stem first, and then adopting the same proceeding with the side branches, and this picking-off of the flower buds will have to be persisted in until the plants are as large as required. In picking off the buds care should be taken to leave some on all the shoots, but take off all that are the size of peas, as when of larger size they stop the growth of the plants. The removal of the flower buds may be practised to within a fortnight of the time at which the plants are required to bloom, they taking about that time when the buds are of the size of peas, so that the period of blooming may be determined to a nicety. If large plants are not wanted, we have only to pick off the buds from the central shoot until there are buds on the side shoots, and we can then thin them out to a distance of 1 or 2 inches along the shoots, and allow the plants to bloom. It is necessary to thin out the flower buds, for these form too thickly on the shoots, and not having room for proper expansion, the individual flowers will be small as compared with those on plants properly attended to in this respect.

The repotting must be performed as soon as the pots become filled with roots, the plants being shifted into pots a size larger, and this repeatedly until they are as large as wanted. In shifting, the plants should be sunk deeper in the pots, but it is well not to sink them more deeply than within an inch of where the seed leaves were situated; in no case ought they to be sunk lower than this, and I think it is better when they show some portion of the stem. The size of the pot will vary with the size of plant, but I consider 8 or 9-inch pots quite large enough. The last shift may be given about a month before the plants are required to bloom, and the pots will be full of roots in about a fortnight; then, in place of increasing the size of pot, we have only to feed the plants with liquid manure, which will be required at every alternate watering, and it should be given in all cases after the last shift when the pots are full of roots, to maintain the swelling of the buds, and keep up the vigour of the plants.

No stakes should be used, but the central stem must be kept straight by frequently turning the plant round, and the side shoots should be tied down so as to feather the plant near the pot, and in this way a symmetrical and pyramidal form should be sought; but this tying-down and regulation of the side shoots will only be needed for a time, for when the plants are coming into bloom every tie must be removed.

In no case ought the soil to be kept constantly saturated, but whenever it is likely to become too dry a good watering should be given—enough to show itself at the drainage. The foliage must not be permitted to flag from want of water. Occasional syringings are beneficial, and a light sprinkling may be given morning and evening until the flower buds expand, when it must be discontinued, and the paths and other surfaces sprinkled with water two or three times a-day to produce a moist atmosphere, which the plants flourish in; but it must not be very close, otherwise they will become weak. They should have moisture abundantly, but it ought to be accompanied with air; they will then have fine foliage, and thick sturdy stems and shoots.

The best soil I have used is turf taken from a pasture, 1½ inch thick, where the soil is a good rich sandy or light loam. After it has been kept for six months in alternate layers with cow dung or horse droppings, it should be chopped and broken up rather finely, but not sifted. In case of there not being compost of this kind, one-fourth of old cow dung may be added to light turfy loam; or well-rotted hotbed manure may be used if cow dung is not to be had. These materials well mixed will grow Balsams well. Good drainage should be given.

In summer the plants succeed best in a cold pit or deep frame, as they can then be more readily kept moist, and have the treatment specially suited for them, than when grown in a house shaded by climbers or Vines. Balsams not requiring any shade except when pricked or potted-off, and only then until they become again established.

Fine large plants may be had in eight or nine weeks from sowing. Plants from seed sown in April will flower by the middle of June, those from the May sowing by the middle of July, and those from the June sowing at the end of August.—G. ABBEY.

PREVENTING THE BLEEDING OF VINES.

THE composition used by painters, called "knotting," is the most simple, cheap, and effectual remedy that I have yet met with for preventing the bleeding of Vines, &c. I have used it

two years, and it has in every case answered satisfactorily. I would advise everyone who has not done so to give it a trial, and make known the results. It may be had from any painter, and I find from an advertisement in THE JOURNAL OF HORTICULTURE that knotting is to be had at 10s. per gallon.—L. TEMPLE.

THE GOOSEBERRY TREE PYRAMIDALLY TRAINED.

WHILE so much attention has been paid to the various methods of training fruit trees generally, and Apple and Pear trees in particular, it is not a little surprising to find that the Gooseberry and Currant have in most cases escaped all innovations in training, and have been allowed to maintain the bush or cup-like form. True, there is to be found in almost every garden in the kingdom a portion of the shady side of a north wall covered with the Red and the White Currant, while the Gooseberry may occasionally be found occupying a similar position, all subjected to the roughest usage, with no pruning or training, and generally noticeable more as objects of neglect than of successful culture. "AYRESHIRE GARDENER" some time ago suggested in this Journal a method which he had himself tried—viz., training the Gooseberry to strained wires near the ground, cordon fashion; and no doubt a number of such regularly intersecting a garden, by way of dividing the different quarters, would have a neat appearance. With these and other slight exceptions the Gooseberry and Currant are invariably met with trained in bush form. It is to another mode of training the Gooseberry and Currant that I would now direct attention; if the Apple and Pear can be pruned and trained be made to assume almost any form we may desire, why should not the Gooseberry and Currant be made to do the same? It may be here argued that the latter two in their natural state always partake of the bush form, while the former, under the same conditions, attain more majestic proportions, and therefore we ought always to study the natural form; neither the Gooseberry nor Currant naturally partakes of a pyramidal form, and it is to this form that I wish to call attention, for I believe the Red and White Currant, and especially the Gooseberry, to be much more amenable to pyramidal training than the Apple or Pear. Previous to entering my present situation I had not seen the Gooseberry so trained, nor had the thought ever occurred to me of the tree's adaptability to that form; and it was with a feeling, if not of actual astonishment, certainly of something akin to it, when I beheld for the first time pyramid-trained Gooseberry trees. The large size and the apparent age of these trees impressed me some time afterwards with the idea that this had been a form of training long since given up, and hence the reason that I had never met with any so trained before.

Between thirty and forty Gooseberry trees are trained in the pyramidal form here. I can give no information as to the age of the oldest and best of these trees, fifteen in number. In height they average from 7 to 8 feet, and the diameter at the base of the pyramid is about the same. They are quite as regular in outline as a Fuchsia grown for exhibition purposes, and this with little, if any, tying-in of branches. A strong stake in the centre is all the support necessary, and to this one and occasionally two leading shoots are tied; side shoots emanate from these, and by the careful selection of such for retaining, and an eye to pruning at the requisite length, the pyramidal form can be easily maintained. Had it been thought necessary or desirable these trees might have attained, and could yet be made to attain, much larger dimensions, as the centre shoots had reached the extreme limit of their supports long ago, and the side branches have been encroaching on a walk and on each other many a day. The varieties so trained are old and common; they include Red Warrington, Ironmonger, Sulphur, Golden Lion, Hedgehog, &c. Anyone can picture to himself the splendid appearance presented by such trees when bountifully laden with ripe fruit.

It is not necessary to plant further apart than the usual distance—from 5 to 6 feet, should the object be to train pyramidally; because, although the plant is made to attain a greater height, it does not extend further sideways than when trained in bush form.

To me it appears that this method of training the Gooseberry and Currant possesses advantage over the old and common form, apart from the more handsome appearance presented. A greater quantity of fruit is produced, as a consequence of the greater size of the plant, and the fruit is not covered with

sand after heavy rains, as is commonly the case with that grown on bushes trained near the ground.—J. A., *Wallhouse Gardens*.

AUCUBA JAPONICA AND ITS VARIETIES.

Of all hardy evergreen shrubs, the *Aucuba* is certainly the most elegant; its evenly-shaped dense habit, and its fine broad leaves beautifully spotted with yellow, its general neat aspect, and its hardness of constitution, have combined to make it the most popular of what are considered our non-flowering shrubs. It delights in every soil that is not too sandy, and in every situation where it is not fully exposed to the sun, and, undoubtedly, stands the smoke of large towns better than most other plants.

The articles that have recently appeared in your *Journal* on the *Aucuba* as a berry-bearing shrub, prompt me to add a few words in the hope they may be of service to those who cultivate the new varieties, and encourage those who do not. I cannot but express my surprise at the few private collections in which one meets with a male *Aucuba*, or any of the recently-introduced beautiful varieties of the female. So much was written about them at the time of their introduction, that it was expected the country would soon be overshadowed with them; but instead of this I find very few amateurs who know any beyond the old kind, also known as the Variegated or Spotted Laurel, introduced into our gardens upwards of eighty years ago. Such owners of gardens who have the old *Aucuba* among their shrubs, I wish to inform (although far from being the first time your columns have stated the same), that the *Aucuba* is dioecious—that is, the male and female flowers are borne on separate plants, and till within the last few years we have only had a female variety in our collections, thereby being deprived of its brilliant fruit. Owing to its native country (Japan) being rigorously shut up from Europeans, we were unable till about the year 1861 to get possession of the male kind, and in the spring of 1864 a green-leaved *Aucuba* was exhibited in London, loaded with large oblong berries of a very bright coral red, and four times the size of those of the Holly, thus showing to the horticultural world that it had by no means seen the brightest side of this favourite shrub. Two or three years previous to the above dates, Siebold, a Dutch botanist, long resident in Japan, introduced into Europe several diversely-foliaged kinds, all female, but to Mr. Robert Fortune is due the honour of having sent home the first male. That celebrated traveller tells us that in its native country the *Aucuba* grows in woods and hedges (thus verifying what is stated about its not liking a very sunny situation), and so great a variety of variegated forms of it are found, that scarcely two plants are alike. The Japanese preferring these, it is very difficult to meet with the green-leaved kinds.

The male plants do not differ either in habit or hardness from the female, therefore one male might be planted in the centre of a group of females of the same age, and would, in my opinion, annually produce sufficient pollen to fertilise the whole of the surrounding pistils. Some varieties of males are stronger-growing than others, and produce large upright panicles of bloom, in size resembling those of the common Lilac; these, when agitated by the wind, or by the aid of insects, would distribute sufficient pollen to cover a very large surface of female bloom. One difficulty presents itself, however, by the male flowers often opening before those of the female. When this happens it only remains to gather the pollen for after-application with a camel-hair brush, or to exercise judgment in the choice of varieties, some males being later and more prolific in flowers and stamens than others. In my opinion, experience will ultimately show that two or three bushes of the male in a large garden will be quite sufficient for a tolerable number of females, even should they be scattered about the grounds. For the past two years I have noticed berries on the common *Aucuba* in my grounds, which are extensive, on plants not only a good distance from my males, but separated from them by high Laurel hedges and large specimen Conifers. Some *Aucubas*, too, in a private garden more than a quarter of a mile from mine bore berries last year, and I have ample proofs that there are no males nearer than mine, and in this case several houses and hedges intervene. I by no means wish your readers to entertain a hope that a male *Aucuba* planted near their houses will be sufficient to "berry" their plants a quarter of a mile beyond. I merely wish to show them that by a very small outlay they may cover their *Aucubas* with bouquets of berries of the brightest red.

Early in 1866 M. Gaujard, of Ghent, and later in the same year Mr. Standish, of Ascot, exhibited seedling *Aucubas* bearing thyrsoid panicles, of which every flower was hermaphrodite. From these great things were expected; we were to have berries without any trouble; but since then I have had an opportunity of seeing the plant in the nursery of the former gentleman, and there was not the slightest trace, nor has there since been, of the fruit ever setting; therefore it has proved a mere botanical curiosity. Since then I have noticed in my own collection that two plants grafted from the true *Aucuba japonica* *maas bicolor* produced flowers having three stamens, and to all appearance a perfect pistil, but in spite of every care I had no berries from them, and since then the same plants have only produced perfect male blossoms.

Two years ago an alarm was raised that the berries were poisonous, in consequence of a poor robin having been found dead with a partly-digested berry in his stomach. If this alarm had not proved quite groundless, it would have tended to a great extent to prevent the culture of *Aucubas* for berry-bearing; still, there is no doubt that birds are attracted to the berries by their brilliancy, and by the sweetness of the pulp.

The green-leaved kinds will naturally make the most agreeable contrast with the fruit, and for this purpose I would heartily recommend the *viridis pygmaea*, as being of dwarf habit and literally covering itself with bloom.

The *Aucuba* is readily propagated by cuttings, or by grafting on young stocks of the old kind under glass. The berries take a year to ripen, and require the greater part of a year to germinate; but it is a mistaken idea to suppose they require heat, as I have at this moment several now sprouting in the open air, just where they fell from the plants.

Subjoined are the kinds that form my collection, and I do not believe there is any other distinct variety grown. I am quite aware that with the exception of *Yuccas* there is no class of plants worse named than the *Aucubas*. Nurserymen seem to have mercilessly re-named such of Siebold's varieties as they have introduced from the Continent, with a view to monopolise their sale, and the result is nothing but great confusion. It is also with regret that I see in the catalogue of one of the English introducers of the *Aucuba*, that he is offering for sale no less than one hundred varieties he has raised from seed, and by their descriptions I do not see six strikingly distinct ones, the great probability being that the whole may resemble what we already grow. Seedlings, we all know, will give more luxuriant foliage in their first stages, and I am afraid the novelties in question have not been sufficiently tested, neither do I find they have been exhibited publicly; the whole of them, too, have received common names, such as *Ace of Trumps*, *Blue Gown*, *Lucifer*, *Shylock*, *Wilkie Collins*, &c., making the *Aucubas* at once a florists' plant. My collection is as follows:—

Femina albo-variegata.—Leaves a little broader and more deeply serrated than *maculata* (the old variety), and spotted in a similar manner, for the spots are nearly white in winter. A robust and desirable variety.

F. aurea.—A large thick-leaved variety, the young leaves of which are of a golden yellow (not burning in the sun), afterwards turning to a light green.

F. aureo-marginata (*picta femina*, *limbata*), the most effective kind for foliage. The young leaves are sometimes all yellow, but eventually this colour remains as a broad golden margin to every leaf; the variegation, although weakening with age, is, nevertheless, always visible. The leaves of this and the variety that precedes it are extremely large, and of a thick leathery texture, quite different from all others. Berries large, few, and of a dull red.

F. bicolor elegans.—Very large leaf, nearly the whole of the central part being occupied by a large yellow blotch, which frequently causes it to curl. A very inconstant variety. Large dull red berries.

F. dentata aureo-variegata.—Very short, deeply serrated, striped and spotted leaves. Distinct; forms a neat, compact bush.

F. grandidentata maculata.—Leaves of a rich olive green, scantily spotted and splashed with yellow. This variety is remarkable for the large size of its foliage, and its very robust habit; it is very short-jointed, and sets well for bloom; berries dull red.

F. latimaculata.—An accidental variation from the old kind, from which it differs by its longer leaves, which sometimes have a yellow blotch in the centre, causing them to be warted and twisted. An inconstant and now undesirable variety.

P. longifolia, of Veitch (*angustifolia*, *salicifolia*).—Long, narrow, lanceolate, slightly serrated deep green leaves. Plant of dwarf habit than the next variety. Very dark red berries.

P. longifolia, of Standish.—Long, broad, lanceolate, deeply-serrated rich green leaves. Plant of very free growth. The berries are very long, borne in large bouquets, and more brilliant than any known kind. Should be in every collection.

P. longifolia variegata.—Leaves flaked and sometimes edged with yellow; pretty but inconstant.

P. luteocarpa, the yellow-fruited variety. No one seems to have been fortunate enough to have fruited it; but Mr. B. S. Williams, who sent it out, describes it as bearing yellow fruit, therefore it will be a pleasing addition if it is of a good colour. Leaves green, with a few yellow spots.

P. maculata.—"Our old familiar friend;" the berries it bears are very abundant, small, but of a fine bright colour.

P. sulphurea.—The leaves are powdered with green on a bright yellow ground; plant of free growth; dull red medium-sized berries. A very attractive and distinct variety.

P. vera (*nana*, *viridis pygmaea*).—A dwarf and compact grower, with dark green foliage; it produces brilliant fruit in great abundance; highly desirable for pots.

Mas bicolor.—Leaves dark green, with large golden centre; a very compact and free-flowering variety. The foliage does not curl.

Mas grandis.—A very broad-leaved, deeply-toothed variety of very vigorous growth. Doubtless the largest green-leaved *Aucuba* yet introduced.

Mas maculata.—Large light green leaves, thickly splashed with yellow, of very robust growth. Undoubtedly the best male known, its spikes of blossom being from 6 to 9 inches long, and producing pollen in great abundance.

Mas ovata.—Broad ovate dark green leaves, sometimes ornamented with a few small yellow spots. Quite distinct.

Mas picta.—Very brilliant green with yellow central blotch, foliage much smaller and centre lighter than *Mas bicolor*.

Mas pygmaea.—Of a dwarf and compact growth; leaves dark green and of medium size; a most abundant bloomer, lasting longer than many other male kinds.

Mas vera.—Broad, deeply-serrated, dark green leaves; a very useful male.

To the females might be added *himalaica*, which was formerly considered a distinct species, but is most likely a form of *japonica*, from which it differs by its rounder fruit. The leaves are of a light green, long, narrow, and slightly toothed; it is also longer-jointed than any other kind, and its fruit hangs loosely, and is tipped with green. There were some doubts as to its hardness, but with the exception that its foliage becomes a little paler in winter, it suffers no more than the others. Of course it has to be set for fruit with the male flowers of *japonica*, and one remarkable fact connected with it is that I cannot get its seeds to germinate, neither can I hear of their germinating with anyone else. Its large-leaved variety, *macrophylla*, is also distinct by its fruit, which are large and pear-shaped, but being red and green are not very ornamental.

I had finished the above remarks when I found the following very interesting communication in the valuable French periodical of which M. Carrière is editor:—

"Permit me to call the attention of your readers to the following facts, touching the flowering of *Aucubas*. In 1866 I procured two plants of *A. pygmaea viridis mascula* and one *A. viridis femina*, which, kept under glass, bloomed the following March, the males eight or ten days before the females, so that the former still had an ample quantity of flowers for me to impregnate artificially those of the female, which took well and produced beautiful berries in the open ground, where I had placed my three plants in the month of May. I thought, like M. Bertin, who cultivates a good many of these plants, that the open ground would tend to equalise the time of flowering; the result in my case has proved the contrary. In March of the following year (1868), my plants again flowered, the males fifteen to twenty days in advance of the females, and nearly a month ahead of the old kind (*f. maculata*). I could not perceive any flowers fit for hybridising purposes on the males, when those of the latter were well expanded; notwithstanding this, Nature interfered in some way or other, and at the present time all my *Aucubas* are well provided with berries, including plants situated 45 yards from the two males.

"This year the difference is still more notable. The exceptionally mild temperature of the first part of the winter caused my two males to be in full bloom when the first frosts set in, about the 21st of January. Many of the flowers were destroyed,

but many others have opened since the frost, and there is still a good number, although the pollen does not seem to ripen as it should do. The flowers of the green-leaved female are now scarcely perceptible, and those of the old *Aucuba* are but mere buds, so that there will be an advance of the male on these of at least six weeks, and perhaps more; experience will show if the pollen will be preserved and carried by the wind or insects as last year. I will add that a plant of *A. mascula maculata* that I procured in January, and afterwards placed in the open ground to try to retard its flowering, has not yet bloomed, and that I count on it for fertilising five or six sorts of females that I have in bloom under glass, as well as my bushes of the old *Aucuba* out of doors.

"These facts confirm an idea that I have always had, rightly or wrongly, that for plants there is no other acclimatisation possible than transformation by hybridisation or seedlings; in other terms, that if a foreign plant is either too tender, too early, or too late, we shall never modify the type, but will modify the species by crossing it with one of the same race, harder or earlier, as may be desired." M. Carrière adds, "The facts above mentioned that we ourselves have noted for several years are very interesting, especially in a scientific point of view. They show that the last word has not been said on hybridisation, that the theories admitted are sometimes insufficient to explain this phenomenon, and that at all events the fertilisation of *Aucubas* appears to be done very easily. Might it not be with the latter something analogous to that which takes place with certain plants, Nuts for instance, the male flowers of which expand two months, sometimes more, before the female flowers, and which, nevertheless, are always fertile? We call the attention of botanists to this subject."—GULIELMUS.

PLANTS IN FLOWER DURING MARCH.

March 4. <i>Narcissus pseudo-Narcissus</i>	March 18. <i>Riota fatarica</i>
<i>Alnus glutinosa lacinolata</i>	<i>Anemone apennina stellata</i>
<i>Cerastium Biebersteini</i>	<i>Populus monilifera</i>
<i>Hyacinthus botryoides</i>	<i>Amygdalus persica</i>
<i>Acer dasycarpum</i>	<i>Arabis variegata</i>
<i>Alnus cordifolia</i>	<i>Forstythia viridisaima</i>
<i>Amygdalus communis</i>	<i>Berberis nervosa</i>
<i>Berberis dulcis</i>	<i>Double-blossomed Furze</i>
<i>Chimonanthus fragrans</i>	<i>Gentiana acaulis</i>
<i>Acer rubrum</i>	" 24. <i>Riota orientalis</i>
<i>Clematis balcanica</i>	<i>Cupressus Lawsoniana</i>
<i>Comptonia asplenifolia</i>	<i>Bellis acubifolia</i>
<i>Daphne laureola</i>	<i>Jonquil</i>
<i>Iberis sempervirens</i>	<i>Garrya elliptica</i>
<i>Populus alba</i>	<i>Arabis alba</i>
<i>Erica carnea</i>	<i>Juniperus virginiana</i>
<i>Hepatica triloba alba</i>	<i>Viola tricolor</i>
<i>Arabis lucida</i>	<i>Prunus spinosa</i>
<i>Bulbocodium vernum</i>	<i>Salix helix</i>
<i>Draba aizoides</i>	<i>Daphne collina</i>
" 12. <i>Erythronium dens-canis</i>	<i>Cornus mas</i>
<i>Phlox stolonifera frondosa</i>	<i>Crocus, various</i>
<i>Andromeda floribunda tetragona</i>	" 30. <i>Buxus sempervirens aurca</i>
<i>Primula aculis alba plena denticulata</i>	<i>Viburnum tinus</i>
<i>Berberis Darwinii</i>	<i>Polygala chamaebuxus</i>
<i>Populus canescens</i>	<i>Scilla sibirica</i>
<i>Pulmonaria officinalis</i>	<i>Primula vulgaris</i>
<i>Sanguinaria canadense</i>	<i>Scilla bifolia</i>
<i>Sisyrinchium grandiflorum</i>	<i>Myrica gale</i>
" 18. <i>Vinca minor</i>	<i>Erica mediterranea</i>
<i>Alyssum saxatile</i>	<i>Plum</i>
<i>Viola odorata</i>	<i>Kerria japonica</i>
<i>Cydonia japonica</i>	<i>Ulmus major</i>
<i>Veronica syriaca</i>	<i>Linnæa flavum</i>
	<i>Orobancha vernus</i>

—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

PROPAGATION AND WINTERING OF VERBENAS.

MR. CLAYTON (see page 174), evidently does not agree with me in condemning the old way of keeping *Verbenas* in store pans, but I can assure him that keeping them three in a 6-inch pot is by far the better plan. I have tried both, and where the old way answered once it failed twice. As to its requiring more room, the pot system does not do so if we take into consideration the number and quality of the cuttings. One may obtain from seventy to one hundred cuttings from one pot, and far stronger than if they were cramped up in a pan; at any rate it is so as far as my experience goes. Mr. Clayton advocates striking them in bottom heat, but if he will try them

under a north wall in the end of July, in a box covered with glasse, he will not lose a cutting, providing they are attended to properly in other respects. This plan is also the least troublesome, which is a great consideration in small places.—E. WILSON, *Propagator, Chatsworth.*

SEEDSMEN'S MISTAKES—KITCHEN-GARDEN CROPS.

In reading over the report of the Royal Horticultural Society, published some time ago in your Journal, in that part bearing on the adulteration of seeds, if I mistake not it was stated that the Society were convinced of the evil, but there was no redress. This, I think, is much to be regretted, for many a gardener has been driven to his own resources for raising choice productions which he might wish to perpetuate, and in no case more so than in that of the Cabbage tribe, especially the Broccoli. I have complained of this before, and I do not feel ashamed to do so again. There must be a fault somewhere. I would not for one moment impute any sinister motive to our respectable firms, but it is an admitted fact that seeds in many instances are far from being pure. I will give you an example.

At the present time I am cutting some very fine Broccoli, the seed producing which was supplied as Dwarf Russian, and which I hoped to have to cut in May. The seed was from a most respectable firm. The plants are growing on a north border. It might be said, I ought to be thankful for them, and so I am, but they are far more like what we used to get for Wilce's Broccoli many years ago than the Dwarf Russian Broccoli of twenty years since; besides, March, you know, is not May, and we have other kinds that are ready now. It is not very pleasant, you will agree, to have to use now what we expected to do us good service in May.

We have had a full supply of Snow's Winter White and Backhouse's Winter White Protecting Broccoli since November, in fact we have not been without Cauliflowers and Broccoli since last May. I hope we shall be able to keep up a supply until the autumn-sown Cauliflowers come in.

At page 103 of "our Journal" is given by an able contributor a list of useful kitchen-garden seeds, but one selection does not answer in all places or meet all requirements. There are two names omitted in the Broccoli department which some of us northmen cannot dispense with. One of these is Purple Sprouting Broccoli, or as some call it Asparagus Kale, but what I have had under these names are two distinct plants. What we have as Purple Sprouting Broccoli is in use now. The sprouts being taken when 3 or 4 inches long, and the leaves removed, such sprouts properly cooked, and served as Asparagus, make a most desirable dish when vegetables are scarce, and are much esteemed by many. The other vegetable which I cannot as yet dispense with is Lee's White Sprouting Broccoli, which I do not see in the selection; with us it comes into use late in winter and early in spring, and is in use now. When this was first sent out by Messrs. Lee I procured a sealed packet for trial; that is now many years ago. I found it very useful, and have saved my own seed since, and I have not regretted making the trial. My plants produce a nice little Cauliflower at the top, and from twelve to twenty side branches, which altogether make a very respectable dish from one plant. They require watching as they approach maturity, and when they show their flower I gather the leaves up and tie them at the top, to keep the heads white and save them from frost. A little hay, or a few evergreen branches, will protect them. I find that the former answers and gives the least trouble.

With respect to the Nuneham Park Onion my last year's packet of seed was nothing like what what first sent out, in fact, I came to the conclusion that there was not an original Nuneham Park Onion in the lot, but some very nice Danvers' Yellow; however, I took the precaution to grow some seed from the first stock, therefore I expect to keep it true for some time. Somebody has taken the cream off the bowl with it, and now that the price can be lowered from 2s. 6d. to 1s. per packet, the quality might have been kept up a little longer. From the first half-crown's worth I had of it I managed to raise sixteen Onions, very fair profit that for a novelty. There is a saying that wit is best bought, but it may at times be bought too dearly.

I am inclined to think there exist some mistaken ideas respecting the germinating properties of seeds. I have oft-times proved that seeds of many of the Brassica tribe have germinated very well after being kept several years; Elletson's Breccoli has done well after being kept six years; Lee's White

Sprouting four years; Couve Tronchuda home-grown five years. Last year I had an excellent crop of Green-top Yellow Bullock Turnips from seed nine years old. I find that seedlings from old seed take a few more days than those from new seed to show themselves above ground, but I can discern no difference in the produce.

We have had here a March month in earnest. I do not need a microscope to discern a failure in wall fruit. Though we have done the best we could with what means of covering we had, I find that many fully expanded blooms are now falling.—M. HEEBLETHWAITE, *Acklam Hall, Middlesbrough-on-Tees.*

MESSRS. LANE'S SHOW OF SPRING-FLOWERING PLANTS.

MESSRS. LANE & SONS, of the Great Berkhamstead Nurseries, have this year arranged in the Eastern Conservatory Arcade in the Royal Horticultural Gardens at South Kensington, a numerous and very pretty collection of the above plants, together with fruiting Aucubas, and various graceful Conifers and other subjects, which serve to set off and relieve the bright colours of the groups of flowering plants. These consist of fine masses of Azaleas, Rhododendrons, Roses, and a variety of miscellaneous plants, the whole most tastefully arranged at the back of the Arcade, and in excellent bloom.

CAMELLIAS IN THE OPEN AIR.

The timely and able articles by Mr. Robsen and Mr. Kent on their experiences of the capabilities of this magnificent shrub for out-door cultivation, I trust will remove all doubts from the minds of your readers as to the hardiness of the Camellia. I append a list of the best varieties, all of which are growing here without protection, and hope this may be a means of inducing a more general cultivation of this queen of flowering shrubs.

WHITE.

Alba plena.—The old White needs no description.

Mathotiana alba.—Very double, pure white; half expanded, it is cup-shaped, with a tinge of yellow. Flowers 4 inches in diameter. This is a magnificent flower. The plant is vigorous, with handsome dark foliage.

Candidissima.—Pure white; distinct from *Alba plena*, and equally beautiful, with shell-like petals.

Bianca Geraldini.—Creamy white; very large, cup-shaped. The foliage is handsome; but if the plant is not vigorous the flowers show a few stamens when fully expanded. This is a fine bold flower.

Fimbriata.—A favourite with the ladies, possessing all the good qualities of the old White. The petals are finely serrated.

Duchesse de Berri.—Transparent white; of good form and substance. The plant is of rather straggling growth.

RED.

Madame Le Bois.—Deep reddish crimson, superbly imbricated, with shell-like petals; foliage of a deep lustrous green. This is a first-rate flower, and the plant makes a splendid bush.

Imbricata rubra.—A bright carmine red, often mottled with pure white; of perfect form. The plant is vigorous, with the foliage of *Alba plena*.

Reine des Fleurs (Commensal).—Deep red, shaded crimson; of splendid form, with shell-like petals. Habit of plant vigorous and compact.

Mathotiana (rubra).—Deep crimson, with shell-like petals. A bold and effective flower, perhaps coarse.

Léon Leguay.—Carmine, shaded with crimson; very double. A beautiful and telling flower.

Pictorea rosea.—Bright rosy carmine; very large, well imbricated, half-cup-shaped. This is a most effective flower. The plant is of straggling habit.

ROSE.

Saccoi vera.—Soft rose, semi-transparent petals; of perfect form, and admirably imbricated. This is a model flower, of great beauty and delicacy. The plant is vigorous and very free-flowering.

Valtearedo.—Bright rose, often splashed with white; very double, and of good form. The plant is vigorous. A first-rate variety.

Landrethi.—Very similar to *Saccoi vera* in form and substance, with a deeper colour. The plant makes a symmetrical bush.

Impératrice Eugénie.—Light rose, with a violet tint, the outer

edges of the petals white. This is a delicately coloured flower of great beauty.

Queen of Beauties.—Rosy flesh; of large size and good substance. Very beautiful.

STRIPED.

Contessa Lavinia Maggi.—Pure white, with carmine stripes and spots. A noble incurved flower, with the colours very distinct. The plant is vigorous, and the foliage of a dark shining green.

Caryophylloides.—Flesh white, striped and spotted with carmine. A fine incurved flower, with broad bold petals of good substance. A free grower.

Countess of Orkney.—Pure white, with broad splashes of bright carmine; petals broad, and of good substance. Half expanded, it is a magnificent flower; fully expanded, it shows a centre.

Jenny Lind.—White, lightly striped and spotted with rose; petals shell-like, admirably imbricated, slightly serrated. This is a model flower, and first-rate.

Rafa.—Bright crimson with white stripes; regularly imbricated.

Scipione L'Africano.—Deep crimson, striped with pure white; well imbricated.

Princesse Bacchiotti.—Bright cherry red, striped with pure white; admirably imbricated. Free.

Principe de Piombino.—White, delicately but distinctly striped with red; petals broad, incurved, of good substance.

The above are a few of the best varieties. All are admirably adapted for out-door cultivation, and are very distinct. I trust many may be encouraged to give the *Camellia* a trial in the open ground, and report the results of their experience through the *Journal*. I much fear it does not receive the attention it deserves from British horticulturists. Here, in France, and in Belgium, this plant is a leading feature in all nursery establishments, whilst few English nurserymen think *Camellias* worth a description in their catalogues. This has not a *raison d'être*, for no one denies the beauty of the plant, and it is impossible to help admiring the flowers of any one of the varieties above enumerated. Its supposed want of hardiness must have been the bar to its more general cultivation. I trust, after the able papers and incontestible proofs of its hardiness from your correspondents above mentioned, that it will soon be as generally cultivated as it deserves to be.

Mr. Robson justly observes that the frost spoils a large proportion of the blooms, and asks for the experience of others. Mine is as follows: Frost invariably spoils all expanded blooms, but does not injure the buds, and never affects the plants. Besides frost; bright sunshine on blooms wet with heavy dew or rain, turns the petals brown. No amount of rain seems to hurt them; but should a shower be followed by bright sunshine all the blooms on the sunny side of the tree are spoiled, whilst those on the shady side seem if anything improved by it.

To ensure success in the cultivation of *Camellias*, the young plants should be planted in a mixture of peat, well-rotted manure (that of the cow if possible), leaf mould, and sand. That there are growing in this island in the greatest luxuriance hundreds of plants that have never had a particle of either is true, yet hundreds have been lost from not taking this precaution. Whilst young the *Camellia* is very impatient of drought, and, unlike most plants, is slow in showing signs of distress, often not until it is too late. I therefore recommend a regular supply of water during the first season, say once a-week. After the plants have attained a considerable size they will bear any amount of cutting-back to bring them into shape, provided they be not cut back to the naked wood.

Where other shrubs cannot thrive, under trees in shady situations, there the *Camellia* luxuriates. It is grown in this island in every conceivable way—trained against south walls, under north walls, under trees, in the open air fully exposed, and it succeeds well in each and all these situations; but where exposed to strong currents of air, and where the soil is too dry, or is wanting in fibrous vegetable matter, it has a lingering existence.

My experience of this season is that *Camellias* are blooming much earlier than usual, those fully exposed to the sun having commenced in November, and those under north walls are now in full bloom, whilst in ordinary seasons from February to April is the usual time for fully exposed plants, and April for those under the north wall.

The best time for planting out of doors is from the middle of February to the end of March; and if the plants are regu-

larly supplied with water the first season there will be few failures.—*Veritas, Turf Bank, Jersey.*

NEW BOOK.

How to Grow Mushrooms. A Popular Explanation of the Best Method of Culture. By WILLIAM EARLEY. London: Bradbury, Evans, & Co.

THIS is a pamphlet of some thirty small pages. The author "does not pretend to advance any new or original method," "but to call attention to certain facts necessary to ensure success, so that all who are possessed of a cellar, out-house, or shed, may grow Mushrooms." There is no doubt that Mr. Earley succeeds admirably by the system he adopts. There are many good hints on the subject, but on the whole these will be more useful to those who have had some experience than to mere beginners, just because there is a vagueness as to the "certain facts," and a want of explicitness in the directions to suit different circumstances.

With the exception of recommending a centre of faggots for a good-sized ridge out of doors, for which we thank Mr. Earley, the details as to position refer almost entirely to a low house, 9 feet wide, 8 feet high, ceiled over like a living-room, and having the beds made on the floor, which we have no doubt has many advantages. Under such circumstances, however, where simplicity is an object, we would not much trouble about drainage, or a concrete floor, or slates laid across the wall to promote dryness, nor yet about having a hot-water pipe round the walls, 4 feet above the floor, and thus fully 2 feet above the bed, even though we thus should "imitate nature in supplying heat," because provided we gain heat for our purpose, we have less to contend with as respects moisture than dryness. We heartily approve, however, of Mr. Earley's recommendation of hollow walls for equalising temperature.

As to the materials, horse droppings, &c., the directions are excellent, only we would never think of passing them through a sieve, as we prefer them rougher, and we notice that Mr. Earley prefers them rough and dry round the spawn. He recommends, what to us is a novelty, the dipping of the cake of spawn in tepid water for five minutes, and then laying it for a short time on the bed to become heated, &c., before breaking it into pieces to spawn the bed with. We have no doubt this plan succeeds, and more especially because we are inclined to think that Mr. Earley uses the material for his beds rather drier than we choose it to be, and, therefore, more frequent waterings are necessary; all well enough in his hands, but rather dangerous to practise much in the case of a beginner.

We notice that Mr. Earley approves of plenty of light and air for Mushrooms, but the latter cannot be admitted fully in a close ceiled room or house without, to a certain extent, neutralising the beneficial effect of the hollow walls. We rather incline to think, that less or more of light is of no great consequence, as we never knew a Mushroom grow much in sunshine out of doors, and though air is desirable, we would prefer a somewhat close atmosphere to a keen draught of wind in a Mushroom house. True to the above principle, Mr. Earley does not approve of covering Mushroom beds with hay, &c. Certainly, in heated houses the beds look better without covering, and we avoid or adopt it according to circumstances; but in the open air, or under open sheds, we use covering less or more, as we find it to be the easiest mode of keeping the air close to the bed and about the Mushrooms more humid than we otherwise could have it, even with frequent watering.

These thoughts, we feel sure, will cause the little book to be more read than if we had uttered nothing but eulogy; and the only return we expect from the author is, that when he sends out a second edition he will not be afraid to enter a little more into details to suit different positions.

MANAGEMENT OF FIRES.

Young men in gardens should pay far more attention than they usually do to the management of fires. I believe head gardeners generally have some trouble to instil into the minds of their young men the importance of proper management, both as regards temperature and the saving of fuel. Many head gardeners have more words with their young men about fires, perhaps, than any other work about the garden. A man, to be a good gardener, should learn thoroughly how to manage fires. Too many young men, anxious to push plants on, are apt to overdo what they aim at by overheating, and thereby

causing considerable mischief to plants and other occupants of houses, as well as adding materially to the coal bill.

Take, for instance, a Peach house with the fruit set, the thermometer between 50° and 55° in the morning, and the day likely to be bright; a very small clear fire is far better than shovelful of coal heaped on, as if 5° of frost were expected. The man who attends to fires should always have full command of them; he must not have the farther end of the furnace partly blocked up with ashes, and so cause the most of the heat from the furnace to warm the stokehole instead of the boiler. In most furnaces there is a flat iron plate, on which

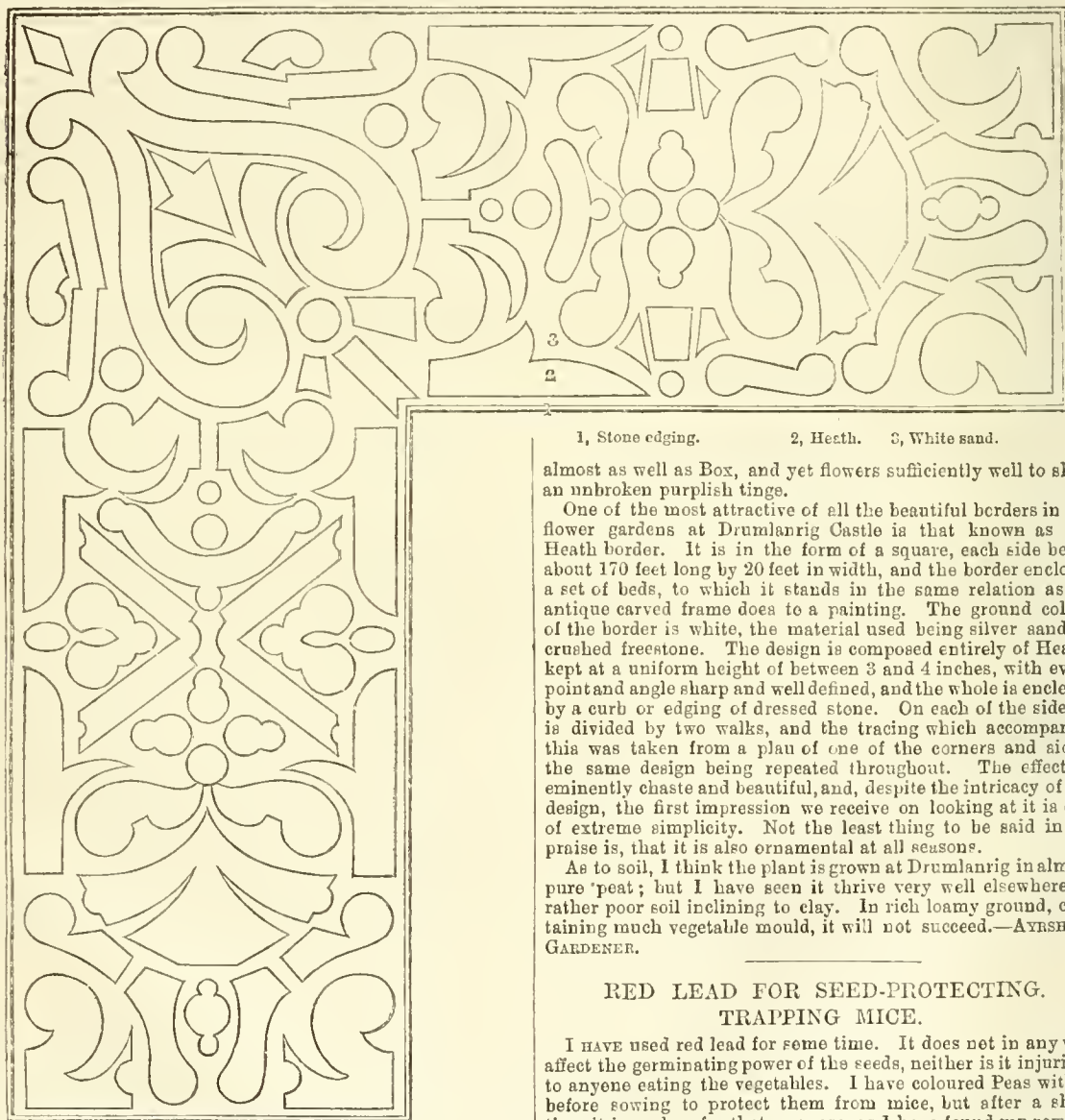
coal should never be placed, as it only injures the brickwork above it; the fire should be kept on the bars, over which is the boiler to be heated, and the plate only used for "blocking-up" material, such as ashes, &c., the last thing at night.

It shows bad management when a furnace is found full of fire in the morning; a fire which has burned properly during the night will have just sufficient left to start it in the morning if required. The barometer, the thermometers in-doors and out, the wind, and the appearance of the sky will show the stoker before going to bed how much fuel to put on his fires, even to a shovelful.—JOHN PERKINS, *Thornham, Suffolk*.

HEATH BORDERS.

The common Heath (*Calluna vulgaris*), has long been used in some places as a substitute for Box in the formation of edgings; and in soils where Box, which is very capricious, will not thrive, it often succeeds admirably. But it is when

suffusion of quiet purple which in autumn steals over a heathy tract of country, the Heath's adaptability to this purpose, in point of colour, will be at once apparent; but it may not be generally known that it submits to be clipped and kept down



1, Stone edging.

2, Heath.

3, White sand.

almost as well as Box, and yet flowers sufficiently well to show an unbroken purplish tinge.

One of the most attractive of all the beautiful borders in the flower gardens at Drumlanrig Castle is that known as the Heath border. It is in the form of a square, each side being about 170 feet long by 20 feet in width, and the border encloses a set of beds, to which it stands in the same relation as an antique carved frame does to a painting. The ground colour of the border is white, the material used being silver sand or crushed freestone. The design is composed entirely of Heath, kept at a uniform height of between 3 and 4 inches, with every point and angle sharp and well defined, and the whole is enclosed by a curb or edging of dressed stone. On each of the sides it is divided by two walks, and the tracing which accompanies this was taken from a plan of one of the corners and sides, the same design being repeated throughout. The effect is eminently chaste and beautiful, and, despite the intricacy of the design, the first impression we receive on looking at it is one of extreme simplicity. Not the least thing to be said in its praise is, that it is also ornamental at all seasons.

As to soil, I think the plant is grown at Drumlanrig in almost pure peat; but I have seen it thrive very well elsewhere in rather poor soil inclining to clay. In rich loamy ground, containing much vegetable mould, it will not succeed.—*AYRSHIRE GARDENER*.

RED LEAD FOR SEED-PROTECTING. TRAPPING MICE.

I HAVE used red lead for some time. It does not in any way affect the germinating power of the seeds, neither is it injurious to anyone eating the vegetables. I have coloured Peas with it before sowing to protect them from mice, but after a short time it is useless for that purpose, as I have found my rows of Ringleader Pea partly destroyed just when beginning to germinate. I have soaked the seeds in turpentine, one teaspoonful to a quart of Peas, with a like result.

I have found the following plan for trapping mice answer well. I procure some glazed earthenware jars, the same as

worked up into live embroidery in the shape of scroll borders, or of elaborate and artistic designs, that the highly-ornamental character and tractable nature of this, our commonest native shrub, are seen to perfection. To all who have seen the soft

those used for pickles, half fill them with water, and plunge them to the rim between the rows. I then rub some lard on the inside under the rim, and thus have a trap which does not require much setting, or treading on the ground.—W. B. J.

ENTOMOLOGICAL SOCIETY'S MEETING.

The second March meeting was held on the 15th of that month, the President, Mr. H. W. Bates, being in the chair.

A letter was read from Mr. Schrader, from China, containing a series of notes and queries on the transformations of the curious genus of Moths, *Oiketicus*, the larvæ of which make terrestrial caddis cases, and of which the females are unwieldy masses destitute of limbs, and which sometimes do not even quit the chrysalis skin, within which the eggs are deposited. Mr. McLachlan exhibited a gigantic species of *Ephemera* from Veragua, measuring nearly 3 inches in the expanse of the wings. It was probably identical with *E. hecuba* (*Palingenia* sp.) of Dr. Hago, from Vera Cruz. Mr. W. C. Hewitson exhibited a series of Butterflies captured by Mr. Bell in Nicaragua, a portion of which had been exhibited at the preceding meeting by Mr. Drace. Descriptions of new species belonging to the genera *Heliconia*, *Eresia*, *Eulagis*, *Helata*, *Mesosemia*, and *Nymphidium* were read by Mr. Hewitson, together with descriptions of two new species of *Papilio* from Ecuador.

Mr. Frederick Smith exhibited a new British Bee, the *Apis cunicularia* of Linnaeus, belonging to the genus *Colletes*, but which is known on the Continent under the name of *Apis hirta*. Four specimens of the male and nine of the female were taken by Mr. N. Cooke, of Liverpool, in the Isle of Wight in May, 1867.

Mr. Butler exhibited some varieties of different species of British Butterflies which he had captured at Chamounix, in Switzerland, in July and August, 1867, which in various respects differed, apparently permanently, from their English representatives. Mr. Stainton added that the common *Atalanta* Butterfly differed in its habits in the south of France and Italy from those of English specimens.

The President exhibited a box of specimens of Butterflies of the *Machaon* division, with the view of showing the amount of range both in geographical distribution and in the modification of size and colour which they exhibited in certain districts, whilst in the greater number of localities the species seemed to be fixed and unchangeable, whence he was led to suppose that such modifications would in process of time become permanently established in distinct species. Thus, in Japan there were at least two well-marked varieties of *Machaon*, one of very large size, co-existing with *P. xuthus* and *P. xuthulus*, closely allied species, as they are now termed. He also exhibited four American species of the same group—viz., *P. zelicaon*, *sadalis*, *asterias*, and a still darker "variety," named as a distinct species by Fabricius. This exhibition led to considerable discussion, in which the "development system" was opposed by Professor Westwood and other members, and supported by Mr. Wallace, &c.

The President also contributed a memoir on the *Prionideous* Longicorn Beetles of the Amazon Valley. Some of these insects are amongst the most gigantic forms of the *Annulosa*. They are essentially wood-feeders; their larvæ are greedily devoured by the negroes. The perfect insects are very rare, and nocturnal in their habits. Twenty-five species were described from the Amazon Valley, chiefly captured by Mr. Bates himself, the total number of species from tropical America being 166.

Mr. McLachlan read a memoir containing descriptions of eleven European species of *Panorpa*, together with a curious new species from Java. There had hitherto been great confusion and difficulty in determining the species of this genus, but the author had been enabled to classify them correctly by employing the characters afforded by the variation in the structures of the appendages at the extremity of the body.

NOTES AND GLEANINGS.

We have received a programme of the INTERNATIONAL AGRICULTURAL AND HORTICULTURAL EXHIBITION to be held at COPENHAGEN, from the 6th to the 11th of July. In the horticultural department prizes are offered for collections of vegetables, collections of Peas, the best cultivated vegetable in season, collections of forced or retarded vegetables, the best forced or retarded vegetable, the most numerous collection of Strawberries, one kind of dessert fruit unforced, one kind of dessert fruit forced; and there are classes for fruit trees in pots or boxes, and for various modes of training, as well as for garden and grass seeds. In the division for ornamental plants and cut flowers, there are classes for collections of stove and greenhouse plants generally, Ferns, and beautiful-leaved plants, for single specimens, Roses, Pelargoniums, hardy trees and shrubs, both deciduous and evergreen, trees and shrubs with variegated leaves, hardy herbaceous plants, new plants, cut Roses, bouquets, &c. Economic plants, plans of gardens and horticultural structures, models, &c., are also invited. Though not entering into the horticultural division of the exhibition, garden tools, seeds and plants of forest trees, and different kinds of wood and

bark, also find a place. Forms of entry must be returned by intending exhibitors before June 15th, to Mr. D. Dessau, Hauserplads, 12, Copenhagen.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The repairing of edgings of Box and other plants round the walks of the kitchen garden having been completed, the gravel walks should either be turned over, or a coat of fresh gravel added, having previously loosened the old surface. Let the whole be levelled and well rolled, repeating this operation, particularly after rain, till they become perfectly solid. In re-forming them, round them slightly in the middle, for rain to pass easily to the sides, but no more than this, except in very wet situations. The walks having been thus regulated, and the edgings, &c., put in proper order, the whole will have an appearance of neatness and good keeping, and if directions respecting manuring the vegetable quarters for the season have been carried out, the cropping and general management during the summer need not cause any deviation from neatness and good order. If the fine growing weather we are now having should be succeeded by a cold period, slight protection should be afforded to young or newly-planted vegetables; a row of short spray placed to windward, or a ridge of earth thrown up on the same side, will help to ward off cutting winds. Water newly-planted subjects cautiously, and these in the morning, for the plants to become dry before night. Sow a few Dwarf Kidney Beans on a south border, and keep a supply in pots for transplanting early next month. Stick Peas as they advance; in the spaces between the rows plant out *Cauliflowers*, &c., as the Peas will afford them a slight shelter.

FRUIT GARDEN.

A sloping bank should now be prepared, and planted with runners of the Alpine Strawberry, for fruiting in September and October; plant threes in patches at intervals of 15 inches; the ground between should be covered with slates when the plants are established.

FLOWER GARDEN.

The long continuance of cold winds will have been very trying to large-sized evergreens that have been recently transplanted, and the attention and expense in watering, which these will have required to carry them safely through, may probably convince many persons of the impropriety of removing large plants in winter and spring. Those who have an opportunity of judging between September and winter or spring-transplanted shrubs and trees, will agree that early in autumn is the best season for the removal of plants of any considerable size. Nothing but the most watchful attention will save those that have been recently transplanted, and besides keeping the roots regularly moist, watering the plants overhead with the garden engine towards evening will be necessary in the case of such as may appear to be suffering from the drying weather; and every plant should be examined daily and carefully, so that nothing may be allowed to suffer from neglect. Take advantage of the present favourable weather for the destruction of weeds, and to clean shrubbery and herbaceous borders; indeed, it will be advisable to run the Dutch hoe over these, if merely to lighten the surface of the soil. Attend to the potting-off of Carnations and Picotees; be careful in seeing that no wireworms escape into the soil in which they are potted; should one of these troublesome insects find its way into the pot it would in a short time do considerable damage, when a little trouble bestowed in looking at the soil might have obviated it; to make sure, place some pieces of Potato in the pot, and look at them every morning, taking care to remove the wireworms, should any be in them. Take especial care of the frames during the night, and that the expanding blooms of Auriculas do not receive a check, for should they, they will, perhaps, have some difficulty in expanding, and during bursts of sunshine in the day it would be advisable to cover the frame with canvas or netting, so as to break the direct rays of the sun. Pansies in pots, keep free from decaying foliage and the fly. Keep Tulips protected, for at this season should there be a hail storm it would do much injury.

GREENHOUSE AND CONSERVATORY.

Any attention which will serve to prolong the beauty of the Azaleas and New Holland plants, with which the show house should now be gay, will be well bestowed, as when these are over, it will, in most cases be impossible to furnish the house with equally handsome specimens, and the same variety of

colours which these afford. Prepare shading without loss of time; also carefully examine the plants in the forenoons of bright days, and see that none of them is suffering from want of water, for with bright sunshine accompanied with drying winds, it will be no easy matter to properly supply plants with water. Bring forward the stock of plants recommended for blooming in July and August, by shifting such as require it, and allowing them more room. *Kalosanths* will require neatly tying-out, as they form beautiful globular-shaped plants by a little management. *Fuchsias* will require a second shift, and should now be in their blooming pots, using light soil for the purpose. The same will suit *Scarlet Pelargoniums* growing for specimens. These three plants can be well managed together. Keep the conservatory as cool by day as is consistent with the health of the inmates; this will keep the plants longer in bloom, and be more enjoyable to persons inspecting them. Any delicate plants with their pots full of roots, which it is not desirable to shift, should have the pot inserted in one a size larger, filling the interval between them with moss or sawdust. This, if more generally practised, would save many a valuable plant from the action of dry, absorbing air, as so porous a substance as a common pot soon extracts the moisture from the mass of earth inside, and however carefully attended to, many plants die from this cause alone in hot weather. In mixed greenhouses, let us presume that a climate is maintained somewhat in advance of that of the cool greenhouse. By keeping one end of such a house (the end where the hot water enters) closer, using more atmospheric moisture, and at the same time a greater amount of air at the other end, it is by no means impossible for the amateur to indulge in many of the luxuries of larger establishments.

STOVE.

Orchids are now progressing rapidly, and will require attention in shading daily, and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with climbers, a little management in training them to effect a judicious shading of the plants beneath, will save much trouble with the canvas outside, as it will only be needed on very bright days, and add much to the appearance of the house. See that plants on blocks, or suspended in baskets, are not allowed to become dry, which would have the effect of causing a check to the young growth, which should be encouraged as long as possible, to obtain strong healthy plants. Plants in bloom should be removed to a house with a drier temperature, to prolong their period of flowering.

PITS AND FRAMES.

As the planting-out season approaches, take every opportunity of hardening-off the winter stock, that the change to complete exposure may be gradual, and the after-growth progressive. Bedding plants must not be rashly exposed for the present, but shade slightly during bright sunshine, and expose freely to air such plants as are well established, carefully avoiding cold drying currents.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We made preparations for planting a piece of *Jerusalem Artichokes*, finding that they were very much in demand, and considering that the gardener should always grow whatever is much in request. We recollect of a large garden where for twenty years none of the Onion tribe was grown; the sight and the smell even of a Chive was enough to throw the proprietor into a fit. However, the proprietor was perfectly right in banishing from his premises what was so great an annoyance to himself. We never met with anyone who could not bear the sight and scent of a Rose, but we have met with others free from everything like affectation, who could not endure the odour of a Sweet Verbena (*Aloysia citriodora*), or the Cherry Pie (*Heliotrope*). Those who like *Jerusalem Artichokes* ought to have them, though for ourselves we would prefer a Potato or a Parsnip. If once planted in good, moderately rich soil, they look after themselves, and come in for a dish, and for soups in winter, when vegetables are more scarce.

Asparagus.—Hoed and raked, so as to destroy most of the surface weeds, and secured this more effectually by a sprinkling of salt.

Sea-kale.—Planted out all the roots that had been raised for forcing, keeping about 6 inches of the crown-part pieces by themselves, and all the smaller pieces by themselves, as stated

last week. We wish our amateur friends to bear in mind that these bits of roots last season, without a visible trace of a bud, did quite as well, if not better, than transplanted plants. Made up some beds, about 3½ feet wide, with 2½ feet trenches between them, so as to avoid covering with pots in the open air; these we have planted rather thickly with good plants, and we mean, with a few stakes, to place a slab on each side of the trench to keep the beds up. We shall by mulching and other means encourage these plants to grow as strong as possible in summer. As we find time we shall nearly fill the trenches with finely-sifted, clean coal ashes. About midwinter these ashes will be placed to the depth of 6 or 7 inches on the Sea-kale, and covered with a few inches of long litter; and as spring advances we shall put fermenting material in the trenches, which will give a little heat to the beds. As soon as the Kale begins to throw up and appear through the ashes it will be cut; and when all is finished, beginning at one end, we will move back the ashes into the trench, and the dung from the trench to the beds, for the plants to make strong growth in summer. By taking up and forcing during the most of the winter, we shall be able to obtain our spring gathering without the trouble and the casualties attendant on the use of pots. As already intimated, anyone who has a warm shut-in place by the side of a parlour or kitchen fireplace may have Sea-kale during the winter months if he has good-crowned roots to go to.

Globe Artichokes.—These may be great luxuries to suck and chat over, where there is plenty of time for dining; at any rate, some people admire them much, especially when the material used for cooking them would make almost anything good. This winter they would have needed no protection. We have removed all the litter, and shall fork over, if not add, some dressing in a day or two. They promise to be strong and early this season, and therefore to continue the cutting period we have taken off with a pickaxe strong lumps from the stools, and planted a fresh row, which will produce heads late in autumn when the more forward plants have yielded their produce. We have seldom been able to give them what greatly increases their productiveness and the long duration of the flower heads—namely, rich mulching and manure waterings. When thus treated, the same flower stalk, instead of one or two, will yield continued gatherings, as fresh flower stalks will come from almost every joint—a matter worth considering in the case of those who have not many plants. Provided the water is not too strong, we find these *Artichokes* like everything that can be given to them, from soapsuds onwards to guano.

Prepared a piece of ground for sowing the main crops of Winter Greens and other vegetables. When it can be done it is a good plan to sow Brussels Sprouts, and even Scotch Kale, under the protection of glass, and as soon as they make the first rough leaves to prick them out, and then when strong transplant them. But for the many demands on time and labour this plan will pay for the extra trouble, in the strength of the plants and their increased fertility.

Peas.—The weather being so cold in March, we kept a lot of Peas in semicircular drain-tiles under a little protection; but as April came in gentle, we planted them out, and staked them as we proceeded. These have had no check, and will produce our earliest crop. What with vermin, rats and mice, and slugs, we have for years given up sowing in the autumn, or rather early in winter. Counting even the trouble of transplanting, it is a saving contrasted with the constant looking after all the winter. We thus, too, by frequent turnings, have the ground in a fine, friable, pulverised, sweet condition, and the plants generally grow strongly in it, and produce more heavily than from seed sown where it is to remain. For this plan we prefer Sangster's No. 1 to all the newer varieties we have tried. With us several of them come earlier, but they do not bear so well. Merely with the protection of glass, as in a cool late orchard house, Sangster's No. 1, sown or transplanted, does not bear heavily with us, while such a kind as Dillistone's Early bears profusely. We generally sow or plant a row near the front of the house along with Lettuces, and as the Lettuces are taken away, the Peas are allowed to lie on the ground not staked before they are gathered. When in bloom and in pod, they have a very pretty appearance as the flowers look up to the sun. By this plan we obtain a good early crop with little trouble. After having tried newer kinds, as Little Gem, &c., in pots, we have fallen back on Tom Thumb, not because it is the best flavoured, but because it is with us the most productive, and flavour is not so much looked to at first. Our row in pots in the orchard house is looking very well; in

fact, we generally gather more from pots than when the Pea is planted out. We put a few twigs to each pot, and sometimes add a string round them. The Peas want but little watering until they begin to swell their pods, though, of course, they must not be left dry.

Of the Peas sown in the open air, and that were merely coloured with red lead, we have not observed that a single seed has been purloined by birds or mice. We sowed about a week ago some rows without red-leading them, but as pheasants were about we ran a piece of wire-netting 2 feet wide over them, merely bending it in conical semicircular fashion; and though that kept the pheasants off, before two nights had passed the mice had made many tracks, though several were trapped. So far as we have seen not a leaded seed has been touched, and even as respects the young shoots of the Peas, though several pairs of partridges have made themselves rather more domesticated than the invitations given them would warrant, they have as yet left the young shoots alone.

We are obliged to a correspondent who has directed our attention to the danger of poison from eating the Peas, &c., produced by plants whose seeds have been coated with red lead, but apart from the nice chemical question involved, and which has been alluded to, we would take a certain degree of confidence against any evil in the fact that the poisonous lead only affects the outsides of the seed primarily, that these outsides become the cotyledons or seed leaves of the plant, which soon fall off or shrivel up as the true leaves expand, and that, therefore, the plants are less likely to suffer than they would be were a poisonous matter incorporated with the soil. We certainly should be surprised if the cleverest chemist found the smallest appreciable quantity of lead in the young sweet Peas that were necessary to give a zest to the first young ducks of the season; but still the note of alarm is very timely, and may merit further consideration, and may lead workmen in gardens, as well as painters, to be more careful when working among leads. It is not so long ago that the most of a gardener's family were prostrated with low fever and paralysis from using the purest of water, but coming to them for a considerable distance in lead pipes.

Mushrooms.—We have put up what we intend for the last bed in the Mushroom house, and will be preparing material for a bed in the shed open on one side. These succession beds in the Mushroom house enable us to obtain almost enough of heat without any other artificial warmth, especially when a little covering is used over the beds. In a house regularly heated, we do not consider covering necessary after the Mushrooms come thickly, and without it they are more easily looked after. When a bed is wanted to come in early, the slight covering brings them more quickly to the surface, by the more equal heat, and when little or no fire heat is used, the covering keeps the bed more regular, even if there is only a sprinkling of old hay—more regular not merely as respects heat, but also as respects moisture, and this renders watering little necessary. A close, moist atmosphere is the delight of the Mushroom, as well as of most other Fungi. Woodlice have begun to appear, but if a little covering is used, on taking it off they will scamper to the small crack that will in time be made between the wall, or board, and bed, and a little water near the boiling point poured down there will settle the woodlice and do no harm to the bed.

Cucumbers.—Turned out most of those we intend for early work. Just finished those planted in a pit in the autumn; but for these we should have had some turned out earlier. Our old gardeners managed them all the winter in dung pits, and flat-roofed too. We find, however, that ours in a flat pit suffer from the want of direct perpendicular light in winter, but that may be partly owing, so far as our impressions are concerned, to the seeing at times Cucumbers growing in span-roofed and other houses with steep roofs, and the glass, therefore, more exposed to the straight rays of the sun in the dark months. Such roofs are also superior for the purpose in summer, as then the sun is not so direct and powerful as on a flatter roof. This is also one of the advantages of span-roofed houses with their ends nearly north and south. The house receives the full benefit of the morning and afternoon sun, whilst the strength of the sun at mid-day is greatly moderated.

With a few plants we are repeating an experiment which we have often found successful when we wished to obtain a few fruit as early as possible. Besides the plants planted out in the beds, we have widened the holes in the bottoms of the 6-inch pots containing plants showing fruit, and merely plunged these pots partly near the back of the bed. These plants,

though strong, receive no check in planting. When the fruit begins swelling the plant is well stumped-in, and when the more permanent plants are bearing, and filling the beds, these more temporary ones, having served their purpose, are removed. We need not enter into the reasons why the curbing of the roots induces fertility, or why a little extra manuring causes the fruit under such circumstances to swell more rapidly than if the roots had more range, and the plant more luxuriance. We have grown Cucumbers in rather large pots with great success; but the fruiting in small pots is only for a definite purpose. From plants exactly alike in other respects, we have thus often gained a fortnight or three weeks in gathering.

FRUIT GARDEN.

The work here has chiefly been nailing, as we were behind, and thinning the shoots in the first orchard house—those in the second and on the walls are not yet far enough advanced—watering Strawberries, moving them to the best positions, watering trees in pots carefully according to their requirements, planting out Melons, regulating Vines, thinning Peaches in Peach house, &c.; shutting-up glass houses early in the afternoon to secure the benefit of the sun heat, and at least sprinkling the paths and floors with a little water from the syringe. Our late orchard house, if we sprinkle the paths in a hot day, we leave open in mild nights, not to hurry the trees on. On the open wall in the case of Cherries, the blossom not yet open, we have syringed them all with limewash, containing a little soot to deaden the light colour. That, in proportion as the lime is fresh, will kill the mosses, and do much to keep the trees free from insects. The white colouring has kept the birds from almost all buds, except those of Plum trees. They have punished a fine row of dwarfs sadly.

ORNAMENTAL DEPARTMENT.

We have been busy with out-door work, but the two chief items have been putting in numbers of cuttings of Verbenas, Chrysanthemums, &c., and giving them a little bottom heat. These generally do better than even those that have stood the winter, as when planted out when strong and vigorous they seem to receive no check. We have also been putting our *Calceolarias* out of the bed in which they were struck, and where they have remained all the winter very thickly, and planting them temporarily, so as to have room for growth, in earth and turf pits, where they can have a little protection. They were a perfect thicket before being moved, and there would have been scarcely a loss but for a rat and some mice that found their way among them. They were scarcely ever watered all the winter, but received a good watering about eight days ago. As the cuttings had been inserted in fresh soil brought from the sides of the highway, we raised the plants in lumps 4 or 5 inches deep and full of roots, and then the lumps easily broke off into little balls. Though strong tall plants, they do not as yet show any evidence of having been moved, and we have no doubt that a month or six weeks hence they will rise with fine balls, and can be removed without injury to their destination. They were planted across the bed in little trenches from 4 inches apart, and a little fresh roughish soil was sprinkled along the rows before watering and covering up. The fresh soil is an advantage even in a small quantity, as the beds have been long used for such a purpose. Our compost, merely placed round the roots, would be three parts of sandy loam, one of mushroom-bed dung, and one of leaf mould passed through a wide sieve. The roots run into, and hold in this rough material better than if it were finer. We use many things for protection for a time, but altogether nothing is so good as unbleached calico strained tightly over the bed. Few plants will yet beat the *Calceolarias* where moisture can be commanded in summer, and, managed as above, they give but little trouble. With the exception of air and protection they need little attention all the winter, and we have frequently planted them out under calico; and besides watering them then we gave them no more until a few days before final transplanting.—R. F.

TRADE CATALOGUE RECEIVED.

W. Rollisson & Sons, Tooting, London, S.W. — *General Catalogue.*

COVENT GARDEN MARKET.—APRIL 14.

We have experienced a great falling off in the supply of Apples during the last week, especially of culinary sorts, but the demand is chiefly retail. Rhubarb, being plentiful, takes their place to a large extent.

New hothouse Grapes are now very good, and Strawberries more plentiful. There are large importations of new Potatoes from Malta, Lisbon, and the Channel Islands, selling at from 4d. to 1s. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	3	0	4	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	0	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs.....doz.	0	0	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries.....doz.	0	9	1	0
Grapes,Hothouse.....lb.	10	0	20	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	5	0	8	0	Lettuce.....score	1	0	3	0
Beans, Kidney.....bd.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,pannet	0	2	0	3
Broccoli.....bundle	1	0	2	0	Onions.....bushel	8	0	12	0
Brs. Sprouts $\frac{1}{2}$ sieve	0	0	0	0	Parley.....sieve	3	0	4	0
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	8	0	0	0
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	0	0
Canflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....bundle	1	6	2	0	Radishes,doz.bunches	1	6	0	0
Cucumbers.....each	0	6	1	0	Rhubarb.....bundle	0	6	1	0
Endive.....doz.	2	0	0	0	Sea-kale.....basket	2	0	3	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	6
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	3	0
Herbs.....bunch	0	3	0	0	Tomatoes.....doz.	1	0	2	0
Horseradish.....bundle	3	0	5	0	Turnips.....bunch	0	4	0	6

TO CORRESPONDENTS.

BOOKS (W. Bird).—There are three we recommend for the young man. —“The Cottage Gardeners’ Dictionary,” and Keene’s “In-door” and —“Out-door Gardening.” You can have them free by post from our office if you enclose 10s. 6d. in postage stamps with your address.

RAPE CAKE (I. C.).—Common oil cake will answer as well as rape cake for toiling the wireworm.

POTTED PEACH TREES AND VINES (Half-pag).—We purpose publishing some details next week.

HAREFOOT FERN (E. B. E.).—The generic name is Davallia.

VINES FOR A SMALL PLANT HOUSE (D. J. R.).—None better than the Black Champion and Black Hamburgh. We know of no special mode of heating by burning mineral oil.

BONES AS A GARDEN MANURE (E. R. P.).—As you have no crushing machine, you may employ the American mode of reducing the bones to powder, and which mode increases the fertilising power of the bones. Place a layer of bones singly in a tub, and sprinkle them thoroughly over with caustic potash; then add another layer of bones and sprinkle them with caustic, and so on until you have a sufficient quantity. Cover the tub. The bones will be friable in a few days. Wood ashes will act as well as the caustic potash, if you cover each layer of the bones with 2 inches in depth of the ashes.

FERNS FOR A BORDER UNDER A GREENHOUSE STAGE (A Five-years Subscriber).—In the border beneath the stage you may, if there is sufficient light, grow some of the commoner Ferns. Twelve that would be likely to succeed are:—*Pteris serrulata*, *P. cretica albo-lineata*, *Nephrodium molle corymbiferum*, *Scopolopendrium vulgare multifidum*, *Asplenium marinum*, *Blechnum spicant cristatum*, *Acerophorus hispidus*, *Pteris serrulata cristata*, *Lomaria L’Herminieri*, *Lastrea glabella*, *Lastrea acuminata*, and *Davallia canariensis*. Surface the border from end to end with *Selaginella denticulata*, and plunge the pots to the rim in the border.

SOEWING PRIMULA SINENSIS (S. J.).—To have plants in flower at Christmas the seed should be sown in March, and not later than this month to have good plants, placing the seed pot or pan in a mild hotbed, so as to have the plants up soon, and growing them in a greenhouse on a shelf near the glass, or in a cold frame in summer. The latter is preferable. A compost of equal parts of turfy light loam, sandy fibrous peat, and leaf mould, with one-sixth of silver sand, will grow them well, good drainage being provided.

ALOCASIA LOWI CULTURE (Idem).—It requires a compost of one-half sandy fibrous loam, one-fourth sandy turfy peat, and one-fourth consisting of equal quantities of charcoal in pieces from the size of a pea up to that of a hazel nut, leaf mould, and silver sand, affording good drainage, and using the compost rather rough, but tearing it well in pieces with the hand, and well mixing the whole. Pot when the plant begins to grow, and encourage it with a moist atmosphere and a heat of from 65° to 70° at night, and from 75° to 9° by day, the latter temperature from sun heat. Afford but a moderate amount of air, keep the plant well supplied with water when in active growth, and shift into a larger-sized pot by or before June. In winter keep the plant rather dry, but not so much so as to cause the leaves at any time to flag. Slight shade from very powerful sun is beneficial. The winter temperature should be 60° at night, and from 70° to 75° by day. The flowering of *Eranthemum rubronervium* (*Gymnostachyum Verschaffeltii*), is not uncommon.

PEACH TREES UNFRUITFUL (A. H.).—Though there is an absence of all the facts we should like to know, yet as the Peach trees in your houses are so healthy and luxuriant, but produce little bloom, and that falls without setting, we have no doubt that the trees are too vigorous, and that the wood is not ripened sufficiently. As preventives of such an evil, we would water less, give a high temperature and dryish in the autumn, to ripen the wood, raising less air then. If these means should not be sufficient we would raise and replant the trees at the end of September

or beginning of October, watering the roots and shading the trees that the leaves might fall gradually. Much might be done during the summer by removing or stopping near home vigorous shoots, so as to obtain wood about the size of a quill, which will have a better chance of being thoroughly matured than stronger shoots.

SEEDS FROM JAPAN AND AUSTRALIA (R. N.).—We do not recognise the seeds, but as they are from Japan we should sow them now in a compost of two-thirds loam and one-third sandy peat, place them in a hotbed, and when they come up keep the plants there until they are fit to pot-off singly in small pots. After potting return the plants to the hotbed for a time until established, and then remove them to a light, airy position in the greenhouse, shifting them into pots a size larger as often as those they are in become filled with roots. The *Erythrina* from Australia may be sown singly in small pots in a compost of two parts loam and one part leaf mould, with a free admixture of sand, placing it in a hotbed and treating it as above until October, then keep it dry during the winter, but not so much so as to cause the shoots to shrivel. In February cut it down, and place it in a hotbed, potting when the shoots are a few inches long, and when the plants have become re-established remove them to a light, airy position in the greenhouse, and shift them into the blooming pots in May. Sow the *Helichrysum* in a compost of two-thirds sandy peat and one-third light loam, draining the pot well, and placing it in a house where there is a gentle heat. Be careful not to overwater, and yet keep the soil moist. When the plants are up keep them near the glass and admit air freely, potting when large enough, and forwarding them in the greenhouse. The *Ipomoea* is probably an annual, therefore sow the seed in pots in the compost named for the *Erythrina*, place them in a bottom heat of 75° or 80°, and a corresponding top heat, and when the plants are up and well hardened off remove these to a greenhouse, shifting them into larger-sized pots as necessary. They should have a light, airy position.

CORONILLA, CYTISUS, AND DEUTZIA AFTER FLOWERING (Rush).—The *Coronilla* and *Cytisus* should have whatever pruning is necessary, and be potted in a compost of two-thirds turfy loam and one-third sandy peat or leaf mould, with a free admixture of sharp sand, providing perfect drainage. Sprinkle the plants overhead twice a-day with water, and keep them well supplied with water at the roots, affording a light airy position in the greenhouse. When a good growth has been obtained keep them in the greenhouse, or, better, remove them to a sheltered position out of doors. In the latter case take them into the greenhouse at the end of September. The plants should not be placed out of doors until the middle or end of June. Syringe the foliage well in dry weather to keep down red spider. The *Deutzia* should be kept in a light airy position in the greenhouse and well supplied with water, or be put after flowering in a cold pit until danger from frost is past, and then be placed out of doors in an open situation, plunging the pots to the rim in coal ashes, and giving a good supply of water. There they may remain until wanted for forcing, and should then be fresh potted, but we report ours in October, and remove them to a cold frame, protecting them from severe frosts by a covering of mats over the lights, and by keeping the pots plunged to their rims in coal ashes. We can only attribute the falling of the *Cytisus* flower buds to a deficiency of water, or an attack of red spider.

IRIS FROM EGYPT (Idem).—The *Iris* from Egypt we should think will soon begin to grow, and we should continue it in the hotbed till the foliage appears, and then remove it to a greenhouse, affording it a light and airy position.

WATERING PLANTS (Constant Subscriber).—It is always an advantage to have a tank in a plant house, as if filled often, and the water left for some time before being used, the temperature of the water will approximate to that of the house. This for common greenhouse plants would be sufficient; but for tender plants taken into the greenhouse, or where plants are forced, it is always advisable to have the water warmer than the temperature of the house—say, if the average temperature of a house is from 65° to 70°, the water should be about 80°. This is best secured by a hot-water pipe through the tank, otherwise by adding warm water to that which is colder. More could be done with warmed water than is supposed.

CINERARIA SEEDLINGS (*Amor Justicie*).—All the flowers were quite withered.

BARK RUNNING (R. Walpole).—Any gardener would have told you that the bark is said to run, when it can be separated easily from the wood so as to admit the bud.

GRUB IN TURNIP SEED (T. Garnett).—It is the larva of the Turnip-seed weevil, *Ceulea asinilis*. The larva of the Turnip fly or flea is never found in the seed.

POTTING CAMELLIAS (Stancock).—We would advise potting the plants at once. After potting place them in heat, sprinkling with water overhead twice a-day, and by frequent sprinklings of the paths, floors, &c., maintain a moist atmosphere, watering the plants sparingly, but yet keeping the soil moist until the roots are working freely in the fresh soil; then water more copiously, affording the plants slight shade from powerful sun until the growths are complete, and then expose them fully to light and air, having the foliage dry before the sun shines powerfully upon it. A temperature of from 50° to 55° at night, and from 65° to 70° by day, with a rise from sun heat to 8° or 85° is suitable for the *Camellia* when making new growths. Of the plants sent I name 1, I was destroyed by the post-office punctures; 2, is *Coleus Blumei*; 3, *Farfugium grande*.

BOTTOM HEAT FOR PINE APPLES (Idem).—Pine-Apple plants will endure a great amount of bottom heat. We have known them subjected to a temperature of 140°, and often to 90°, but a heat of 85° is the maximum of bottom heat that is required, and ought never to be exceeded.

HEADING-DOWN NEWLY-PLANTED FRUIT TREES (F. W. R.).—Your newly-planted maiden and trained fruit trees ought to be headed-down at once, the maiden trees being cut down to within 12 inches of the ground, and the trained trees should have their leaders cut back for the production of side shoots at the proper place, and the side shoots may be shortened if they need to be increased in number or vigour.

LIQUID MANURE (Idem). Judging from what you say we should not hesitate to apply the liquid undiluted to fruit trees and other crops, as it cannot be very strong. If you have any doubt, however, upon the subject, you may dilute it with an equal quantity of water before applying it to all kinds of kitchen garden crops and fruit trees.

SEEDLING PELARGONIUM (S. O.).—Your seedling Pelargonium is very pretty and almost identical with one named Viscountess Castlerosse, to be shortly sent out by Mr. Wimssett.

LIST OF ROSES (Hymenocylus).—"The questions are, which should be discarded or added? I should not have advised you, if consulted before purchasing, to buy *Alphonse Damais*, *Blairi* No. 2, *Boursault*, *Catherine Guillot*, *Chenodol*, *Duchess of Norfolk*, *Duchess of Sutherland*, *Dundee Rambler*, *Felicité Perpetuelle*, *General Washington*, *Duc de Rohan*, *Gloire de Saintenar*, *Madame Fillon*, bud grower; *Lois XIV.*, *Mlle. Bouanire*, *Prince Léon*, *Ruga*, *Souvenir d'Abraham Lincoln*, *Virginale*, *Laurent Descourt*, and the *Rev. H. Dombraun*. These I do not know—*Clotilde Rolland*, *Mrs. J. Berners*, and *Kate Hauburg*. These are on trial here—*François Treve* and *Monsieur Noman*. Deducting these the list is very good. Add the following—*Baronne Provost*, *Madame Julie Daran*, *Madame Marie Girod*, I fancy the best Rose of its year; *Madame Alice Bureau*, fine; *Clotilde Rolland*, bluish; *Antoine Ducher*, extra; *Sombrouil*, Adam, *Adrienne Christophe*, distinct and beautiful; *Black Prince*, *Lady Suffield*, *Mlle. Emile Boyan*, and *Baronne de Maynard*. I think that if you add these to your list, you will have all that are really good. Of the new Roses of the year my impression is, that *Adrienne Christophe* (I have seen this in bloom); *Madame Jacquier*, *Perfection de Lyon*, *Monsieur Journeaux*, *Charles Lee*, *Marie Sisley*, *Prince Leopold* (W. Paul), and *Adolphe Brongniart* will all be sought after. *Madame Jacquier* is my hope. It is the colour we want. Of course, the above is only guess. I have reinstated *Madame Masson*; I cannot do without it. It wants a little looking after.—W. F. RACLEY."E

PRUNING ROSES (A Young Rosarian).—Your Roses we should prune in closely, cutting the shoots to within two or three buds or eyes of their base, so as to encourage strong shoots, as without close pruning you can hardly expect them to make good shoots this season, they being so recently planted. If left as they are, or pruned the same as established plants, they would in all probability only make a few weak shoots and have a stunted appearance, therefore cut them back to two or at most three buds or eyes.

VERUCAS (Idem).—Of those you name we should retain for a dozen—*Lord Leigh*, *Attraction*, *Nemesis*, *Beauty*, *Indispensable*, *Meteor*, *William Dean*, *Mazeppa*, *Beauty of England*, *Auricula*, *Lelia*, and *Crimson King*.

ERRATUM.—Page 248, second column, fourth line, for "and they should not," read "and they cannot be exposed to too strong light," &c.

COMPOSTS FOR PLANTS (An Amateur).—For Peony-flowered *Asters*, two parts loam from rotted turves, one part old cow dung, and one part leaf mould, with a free admixture of sharp sand, the whole well mixed together. For *Fancy Pelargoniums*, use two parts sandy loam, one part

sandy peat, and one part of old cow dung and leaf mould, with one-sixth of silver sand, well mixed. For double *Fuchsias*, two-thirds fibrous loam and one-third old cow dung, with one-sixth of leaf mould, and one-sixth silver sand. For *Pansies*, two parts turfy loam, and one part each leaf mould and old cow dung or well rotted hotheb manure. For *Balsams*, two parts turfy sandy loam, and one part well rotted manure.

BALSAMS DAMPING-OFF (Idem).—We cannot account for the Balsams damping-off after they have formed the first pair of leaves; but we think they are kept at too great a distance from the glass, and have not air enough, that the soil is too wet, and the plants too close together in the boxes.

CUCUMBER PLANTS INJURED BY RANK STEAM (Idem).—The best remedy is to attend to the preparation of the dung before the bed is made, and by frequent turnings and mixings to have it thoroughly sweetened. You may now prevent injury to the young plants by allowing a little ventilation night and day even when cold, to allow of the rank steam escaping. There need not be a large opening, but one large enough to admit of the steam passing off.

TRICOLORED PELARGONIUMS (Le Veau d'Or).—The names of the Pelargoniums almost identical with yours in their foliage, are *Little Golden Christine*, *Little Pet*, and *Little Lucy*, all varieties raised by Mr. Wills. *Little Golden Christine* is a charming and a very profuse-flowering kind, its bright yellow foliage being at all periods during the summer months enlivened by its pretty pink flowers, which are borne in great profusion above the foliage. The plant has also a very dwarf and neat style of growth, seldom attaining more than 5 inches in height. If you wish to see specimens, go to the nurseries of those who have especially raised or cultivated them. They advertise in our columns. Go also to the Royal Horticultural Society's Exhibition of Pelargoniums next June.

ARTILLERY PLANT (J. W. C.).—Also called the Pistol plant, is *Pilea muscosa*. It is a small stove succulent, requiring the same treatment as the Cacti, and is readily propagated by cuttings. It looks like a *Lycopodium*, and if the flower buds are wetted the anthers burst, and the pollen is discharged in a smoke form.

MANCHESTER SHOW (A. B. C.).—We do not know. You had better write to the Secretary, Mr. Bruce Findlay.

NAME OF FRUIT (J. A. Cromwell Court).—It is *Citrus decumana*, or Shaddock.

NAMES OF PLANTS (R. F. S.).—*Anemone coronaria flora-plena*. (*Arbutus unedo*).—*Selagoella Braunii* (*S. pubescens* of gardens), *Erythronium dens-canis*. (*G. S.*)—We know of no genus called *Vivonia*. Is it not *Veronica* or *Viviania* written imperfectly? When the plant produces flowers send us one of them and a leaf.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 13th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 7	29.908	29.87	35	42	47	48	S.W.	.02	Overcast, cloudy but fine; clear and fine at night.
Thurs. 8	29.921	29.89	41	44	50	44	S.	.00	Showery, overcast and mild; cloudy, very fine.
Fri... 9	30.051	29.902	48	43	49	45	E.	.00	Foggy; densely overcast, cold wind; overcast at night.
Sat... 10	30.005	29.994	48	34	42	45	E.	.00	Dense fog; fine; very fine; dense fog at night.
Sun... 11	30.079	30.053	78	38	50	46	S.	.00	Fine, hazy; very fine and hot; clear and fine.
Mon... 12	30.237	31.103	76	45	52	47	W.	.00	Very fine; fine and very warm at night.
Tues... 13	30.249	30.083	75	40	52	48	S.W.	.00	Densely overcast; very fine; clear and fine, starlight.
Mean	30.063	29.935	67.29	40.86	49.56	45.43	—	0.02	

POULTRY, BEE, AND PIGEON CHRONICLE.

SHEPHERDSWELL (NEAR DOVER) POULTRY SHOW.

THIS Show was held in the goods-station warehouse, on April 2nd, and went off with great *clat*. The day was beautiful, the Show throughout was well attended, and altogether we must congratulate the Society on their success. Miss Hales, of Canterbury, exhibited largely, and she showed her birds to advantage. The birds in every class were very fairly represented, and the Ducks were decidedly good. The *Bantams* were placed so high up as to be almost beyond the view of all people, except those blessed with very long eyesight and more than average height. The *Dorkings* were good, as also were the *Spaniards*. For *Cochins*, Miss Hales won two prizes with two fair pens.

In *Brahmas* Mr. Ding was first with an admirable Dark pen. The Light variety also gained honours. The *Game* were good, and seemed in good feather. The *Hamburghs* and *Polish*, too, were good birds, and of the former there was a better show than usual for the south of England. In the class for *French* breeds Mr. Ding won two prizes with good pens. His *Crève-Cœur*s were very fine. This gentleman also exhibited some very peculiar *Mauritius* Frizzled birds, which were highly commended. The following is the list of awards:—

DORKINGS.—1, E. R. Rice, Dacre Court. 2, J. B. Plumtree, Goodnestone. 3, Miss Hales, Canterbury. *hc.* E. B. Mackeson, Hythe.

SPANISH.—1, Rev. F. T. Scott, Shepherdswell Vicarage. 2, C. G. Knowler, St. Laurence. 3, Lady James, Betteshanger.

COCHIN-CHINA.—1 and 2, Miss Hales. 3, Rev. F. T. Scott.

BRAMA POOTRA.—1, W. Ding, Faversham. 2, Miss Hales. 3, G. Mills, Woodville. *hc.* Rev. F. T. Scott.

GAME.—1, W. Ayers, Ewell. 2, E. R. Rice. Extra 2 and 3, W. Foster, Ripple House.

HAMBURGH.—1, Miss Hales. 2 and 3, W. Jacob, Shepherdswell (Golden-pencilled.)

POLANDS.—1, Miss Hales. 2, Lady North, Waldershare Park. 3, J. Fittall, Shepherdswell.

FRENCH FOWLS.—1, G. Mills (La Flèche). 2 and 3, W. Ding (Houdans and Crève-Cœur). 3, Rev. F. T. Scott (Houdans).

BANTAMS.—1, J. B. Plumtree. 2, K. Fowle, Wingham. 3, J. Ingman.

ANY OTHER VARIETY.—1, Miss Hales (Sultans). 2, R. Noble, Canterbury (Silkies). 3, J. Jacob (Speckled Sussex).

DUCKS (Ronen).—1, C. Ratcliffe. 2, Col. J. A. Roe. 3, W. Jacob.

DUCKS (Aylesbury).—1, Miss Hales. 2 and 3, W. Jacob.

SINGLE COCK (Any kind).—Extra, Capt. Hall.

JUDGE.—Mr. W. B. Tegetmeier.

THE BIRMINGHAM SHOW.—We understand that the prize list of the Birmingham Cattle and Poultry Show for the current year will shortly be issued, and we are requested to state that persons desirous of making any suggestions or offers of special prizes should communicate at once with the Secretary, Mr. Lythall.

HULL AND EAST RIDING POULTRY SHOW.—We have been favoured with a copy of the prize schedule of this intended exhibition, which is to take place on the 12th and 13th of May next. The premiums are most liberal, nine silver cups and a silver medal being comprised in the prize list, and independently of these the second and third prizes are severally £2 and £1 each. The Pigeon classes afford two prizes for each class, of £1 and 10s. respectively. Rabbits and Canaries also have their silver cups, and likewise liberal money prizes. Of the management of the previous Hull Shows we cannot speak more highly than deserved, and the Raffle Hall is well calculated for such an exhibition. When it is borne in mind how much winning at this Show will influence the sale of surplus stock

throughout the season, we are assured all classes will be well filled. Entries close on Thursday the 29th inst.

NOTES ON GOLDFINCH MULES AND MULE-BREEDING.—No. 4.

MULES—the best of Goldfinch Mules—are generally bred from hens termed “common hens,” which are understood by the fancier to mean those of no particular or choice breed. The yellow hens of this kind are of a lemon or brimstone appearance, and the mealy birds much lighter in feather than the generality of mealy birds.

When I remark that muling hens of this sort are of no particular breed, of course I intend it to be understood that they are only fit for the purpose of breeding Mules. In this respect they are considered choice—better, in my opinion, than anything else. There is a breed named Yorkshire, which partakes of more length than the foregoing, and from which I have had several excellent specimens of Mules. I prefer the shape of the Mules from this kind, for they are more sleek and “stylish” than those bred from a short thick-set hen, but there is not so much dependance to be placed upon the young being thrown with light feathers. Whenever I have an opportunity I cross one of the Yorkshire breed with a common specimen, for the purpose of increasing the length, but only when I have proved there is something worthy of crossing. I would not cross the breeds without testing that either has been bred from birds that have thrown Mules with light or broken feathers.

I have likewise bred Mules from Norwich, half-bred Norwich, some of which I have now, and others, from all of which I have had varied success, but mostly dark young Mules, with only here and there a specimen having a few pied or light feathers in the wings or tail, with a mark resembling a ring round the neck. At the present time I have a handsome, even, although too heavily, marked Buff Goldfinch cock Mule, the winner of a first prize at Cambridge, and also a first prize at Leighton Buzzard in 1868. This bird was from a hen I bred myself from one of the tried common breed and a Buff Norwich cock. I was fortunate in obtaining a nest of three, two hens and a cock; two being still alive with me, and Captain Fisher, of Gloucestershire, being favoured with the other for muling with last season. The common hen that I crossed with the Norwich I had previously from Mr. J. Doel, of Plymouth. I merely state this as an instance of perseverance to endeavour to obtain muling stock with as much quality as possible. It adds much to the appearance of the Mules when they are possessed of a fine bloom.

Good hens for muling purposes are difficult to be had, and even when obtained from a good strain there is still a great chance that the Mules may be dark. When I succeed in breeding pied Mules, if the time of the season will allow, I try for a nest of Canaries, or if not successful, and the hen passes through the next moult, I pair her with a cock bird of the same strain the following breeding season for a nest, sometimes two, before putting-up the hen with the Goldfinch for Mules. My plan is to match a yellow cock to a yellow hen, or a mealy cock to a mealy hen. I breed in-and-in, both as regards colour and relationship—a practice directly opposite to that which I adopt in matching my Canaries. I generally endeavour to keep by me a cock bird or two for this particular purpose, but if by chance I am short, I try to have from a mule-breeding friend one of a likely strain.

It does not follow that good mule-breeding hens should be always clear, or free from dark feathers. I have by me at the present time a pied hen I bred from a heavily-marked strain, which throws very good marked Mules. I know many instances of good “broken-feathered” Mules having been bred from marked hens.

Great success will often occur from breeding with a chance hen. I mean one known not to be the offspring of a muling hen. Several instances have come to my knowledge, one not long since, which I will mention. It occurred during the last breeding-season. Upon paying my third visit to the famous annual bird show at Sunderland, I was informed by Mr. George Shiel, the proprietor of the Queen's Hotel, who is a breeder and enthusiastic admirer of Canaries and Mules, that from a yellow Norwich hen Canary furnished by me, he bred a lot of handsome Mules, some of them, if I remember rightly, having been almost clear. One, a fine specimen, he exhibited at Sunderland. The hen in question Mr. Shiel had solely for Norwich breeding, but failing to pair with the cock Norwich bird, she was placed to a Goldfinch. I mention this as one of

the chance instances of breeding good Mules—birds well pied—but not as an everyday occurrence. The odds are much against this chance work.

Those who make a regular practice, season after season, of breeding Mules, excellent ones too, both Goldfinch and Linnet, I know full well would not think of wasting their time by trying any kind of hen. Their plan, and mine also, is to breed from tried stock, or the offspring of hens proved to have bred Mules broken in feather. I will guarantee that if a breeder were to try a dozen casual or haphazard hens to mule with, he would not obtain a good specimen from the whole of them during the season. He would fill his cages with dark Mules entirely, unless by chance one or two should have an odd feather either in the tail or wings. This would compensate wretchedly for his trouble. I know those who have tried for years, and have not even yet succeeded in obtaining a Mule of moderate appearance. Many a good-bred hen has been cast aside because she has not at once pleased or satisfied her owner. Last season I furnished several breeders of Mules with hens bred purposely for muling. Some succeeded, others failed, but with the intention of persevering the forthcoming season. One of the finest Goldfinch Mules from one of the hens Mr. Jonathan Unwin, of Hanley, exhibited at the late show there, and it was a very good specimen of a yellow Mule. I am in some measure compelled to mention these facts, wishing those who may have failed to exercise further patience and perseverance. I know there is a vast amount of interest existing as regards breeding good Goldfinch Mules.

The changing of a Goldfinch, I will admit, often makes a difference, and although I have frequently had remarked to me that “it's all in the Goldfinch,” I cannot for one moment entertain the idea, for if so, any hen would do. The difference the changing of a Goldfinch may make at times, I believe, depends much on the constitution or the condition of a Goldfinch or muling hen at the time of breeding. Let any practical breeder try a dozen hens bred from a likely strain, with three or four Goldfinches, and he will see the difference between them and the dozen haphazard hens.—G. J. BARNESBY, *Derby*.

SEX OF LARKS.

Your correspondent “A SUBSCRIBER” will find the following hints of use in determining the sex of the common Skylark. The bill of the male is larger, stronger, and broader at the base than that of the female; the head is larger, the birds being preferred that are widest between the eyes; the chest is more developed, causing the bird to handle large round the shoulders; the tail feathers are broader and longer. The expanse of the wings in the male is from 13½ to 15½ inches, while in the female it is only from 11½ to 13½ inches. When the wing of the female is opened out the ends of the flights form a straight line, but the three outward pinions of the male extend from one-half to three-quarters of an inch beyond the line at the points of the feathers, and the wing is more curved from the shoulder to the pinion point than in that of the female. In addition to these particulars I may say that the colour and marking of the plumage of the male are more distinct than in the female bird.

The above are the observations of a long experience, and will seldom fail to indicate the sex correctly.—E. HUTTON.

MY DOGS.—No. 4.

MY DOG WHEN I WAS A NEW BENEDICT.

“Benedict, the married man.”—*Shakespeare*.

WHAT do others think of us? “Listeners never hear any good of themselves,” is a proverb, and proverbs state what is usually true. The reason in this case is, that if people happen to overhear anything said of themselves, it will, I fear, not be likely to gratify their vanity. How admirably does Scott show us this in a conversation which that very self-satisfied young man, Frank Osbaldistone, once overheard, the speaker being his own servant. “Ay, ay,” said Andrew Fairservice, “Ay, Mr. Hammergaw, it's e'en as I tell ye; he's no a'thegither sae void o' sense neither, but he's crack-brained and cockle-headed.” Imagine the feelings of a vain youngster, or, indeed, of any man or woman, overhearing this said of themselves.

But I pass from those who criticise severely, as is generally the case with servants in regard to their masters or mistresses. N.B.—What a scarifier of “my lady,” is my lady's maid, when having a cup of tea with a confidential friend. I ask again, What do others think of us? Are you sure, you

bearded, broad-shouldered, powerful man, that even you little child aged three, with "brown eyes and little nose," thinks so very much of you and your might? May be she thinks you a great awkward fellow, far too tall, and is sorry for you, for if you tumble, as she often does, you will sorely damage your large nose, for you would have to fall so very far. Such a little prattler stood one day, with hat untied, needing the aid of the pliant fingers of nurse, or mother, or sister, when a tall man stooped down and tied the strings for the child. She with the wide-open eyes of genuine astonishment exclaimed, "Can mens tie my hat?" She did not think that the great creature could do anything so useful or so clever. But to descend lower, from children to animals. What do other beings think of us? For instance: What do dogs think of mankind? Are we sure that they always regard men as superior to themselves? I am by no means certain that they do. Forward dashes amid the high grass the silky-coated, silky-eared spaniel; forward he bounds, turning his eye now and then back to him who is obliged to trudge slowly, with only two legs, in a straight line along a footpath. Does not the dog think himself superior to the man? I think he does. Spaniel aforesaid acents a rabbit in the hedge and is after it, high-mettled and excited. "Kings may be blest, but Dash is glorious." And does the dog envy that slowly-walking man? Nay, surely he thinks himself far the superior animal, and if the man be his master he loves him, then, at least with a half-pitying love.

In some dogs instinct rises almost to reason. I give the following true anecdote as proof:—A gentleman, owner of a very clever dog, was walking with a friend who admired the dog. "Yea," said he, "he is a beauty, but his sense is better than his looks. Now, I will hide this half-crown under a stone in the road, and not particularly call the dog's attention, and yet when we have returned home an hour hence, I will bid him fetch it, and he will do so." All this was done, and the dog galloped off on his errand. The day was a Friday, but that night the dog, to the astonishment and disappointment of his master, did not return. Saturday, no dog. Still the master from his great confidence in the dog's cleverness did not give him up, and stoutly refused to go in search of him. Sunday morning, and about breakfast time the dog appeared, with a pair of men's breeches in his mouth, and in one pocket was the half-crown. The facts had been as follows:—A stone-breaker had noticed that the gentleman hid something—he searched, the dog seeing him—found and pocketed the half-crown. The dog, to the alarm of the labourer's wife, had hung day and night about the cottage, and as the man did not appear on Sunday morning, he, when the cottage door was opened by the woman, rushed up-stairs, seized the breeches from the chair by the bedside, and so brought back his master's half-crown. This occurred some years ago, and shows how near to reason does instinct sometimes approach. I will give another instance of the wonderful sagacity, almost reason, in a dog now living. There is a white bull terrier, who each morning meets a passing down-train, the guard of which throws out at a certain spot a newspaper for the dog's master. One rule the dog always observes: if the weather be fine he starts much earlier, and lies resting on the grass by the line; if it be bad weather, he only just comes in time.

Now, the dog I have to tell of when I first became a Benedict was the reverse of all this, for she was a very silly dog, but like many foolish people, she once did something clever.

I was then, I said, a new Benedict; some of my readers will remember the time when they became new Benedicts. The wedding tour over, the settling-down in the first home with everything new about them, the drawing-room glittering with marriage presents—all so new; the life so unlike the former life, and yet unlike, most probably, the life to follow; for business, cares, joys, and sorrows will follow; also life's realities, the family coming and growing-up around, until the old Hebrew poet's words become true for the many-millionth time. "He maketh them households like a flock of sheep." Now, my first home was in Scotland, on its eastern coast, almost within sight of Ethie Cliffs, up which Miss Wardour was supposed to have been drawn, as, indeed, she might have been. Mine was an old Scotch residence, many-roomed, ivy-covered, with one tower standing, the last of several brothers. The place was more like a French château than a British house; indeed, it was said to very much resemble the château of Hougoumont, for the possession of which there were such a series of fierce struggles at Waterloo; and, indeed, the place had figured in the wars of the great Marquis of Montrose. Its walls, many yards thick in places, to say nothing of an outer wall high and

thick enclosing an acre or so of land, and its one approach through a high and strong archway, must have made it well suited for a house of protection and of easy defence.

There I was a "new Benedict;" but two persons feel a want in time of other beings, and ere that want is mercifully supplied, they usually take to pets; so before the right sort of pets came we set up a pet dog. Pet Pigeona I, of course, soon placed in the old tower. The dog, the bride's choice, was chosen for her silky hair and fair spaniel-like (for she was not true-bred), exterior. She was a foolish, nonsensical, faithless dog; the care of her mistress improved her not; she had no sense, and therefore could be taught nothing; she was a silly, run-after-anybody dog, a four-legged, black-haired nuisance, and a source of constant trouble. Fenella was her name. Den (Anglicè Deli) Fenella was not many miles distant, a spot of enchanting beauty—a deep ravine where a silver thread of a waterfall fell with tinkling splash, even in the hottest summer-day, and the green, vivid green herbage rose beside the water, when far up, every field was baked brown; and from out the grass stood numerous pale-stemmed, elegant, quivering mountain ashes, while oaks further up spread a pleasant shade. There, in Den Fenella, Sir Walter Scott spent a long afternoon, and in memory of its happiness named a fairy in his "Peverel of the Peak," Fenella; and we, too, for the same reason named our fair-looking dog Fenella. Happy first home with the light of romance in it, lived in and loved twenty years ago. *Eheu! cheu!* "Time flies, alas! how quick he flies!" And fly on he will until, if I am spared, I shall in my turn become a talking old man, and the Roman poet's words be fulfilled in me as in millions before me, for each old man becomes "*laudator temporis acti se puero.*" But old age is not yet. Still, looking back, even in mid-life, early married days have on them a rich tint of happiness, they seem

"Apparelled in celestial light,
The glory and the beauty of a dream."

So I love to sit and review in southern England the days spent in east Scotland. I think of the old Hougoumont-like château, the tower, the strong-arched gateway, the walled garden, one door of which opened on a view of the "multitudinous sea," and often shut by me after a look-out of but one moment, if I saw the waves coming in "ragged and brown," on the bar of Montrose harbour. For the sight of a rough sea destroys cozy home feelings. Then there were walks and rides, accompanied in their beginnings by Fenella, but the faithless "beastie" soon played truant, and idled away her silly life by her silly self. She seemed incapable of either attachment or discernment. Yet there was one exception. One Sunday (fie! oh, Englishman, one Sabbath, for it is of Scotland you are speaking), we went to the parish kirk, and had just sat down in the gallery, the service had not yet begun, when in the door sneaked and pushed thin Fenella, dodging through legs, and avoiding kicks. I tried to look as if I had never seen the dog, but the dog was determined to see me, and being a good general spied at once the best point for inspection—namely, the pulpit. In a Scotch kirk there is no reading-desk, simply a pulpit, usually much loftier than in English churches. Feel for me, oh, reader! when I tell you that Fenella went pat, pat, up the corkscrew-stairs of the high pulpit. Still I tried to look innocent. The congregation were amazed and grieved. One notorious snuff-taker beneath me, whose mull with a bone spoon in it was seldom out of his hand in kirk time, even stopped snuffing. The dog reached the pulpit, and I fondly hoped would there be buried from sight, and then captured by the wrathful precentor; but, no, Fenella jumped on the pulpit cushion, and black and clerical-looking as she was, even to a white throat, she made the juveniles titter. Still I trusted to Fenella's known stupidity, and kept on the innocent look; but it was no use, she saw me at once and gave a loud and joyful yelp of recognition. With a burning cheek I had to descend the gallery and ascend the unwanted pulpit (I was a layman then), and capture and carry out the dog under a fire of very severe looks from certain presbyterian dames.

Often have we laughed over Fenella's exploit, and she shall live now in these pages, in spite of her usual silliness, partly because of this her pulpit deed, and more because she brings before me the happy, happy days, I spent in Scotland when I was a new Benedict.—WILTSHIRE RECTOR.

NORTHUMBERLAND BEE-KEEPING.

By reading THE JOURNAL OF HORTICULTURE I learn that in other districts much more honey is obtained with much less

labour than we are able to do in Northumberland, and that there are either systems or districts which produce honey in a much greater quantity than ours. Nay, it appears as if one had only to put on supers, and in a short time exchange empty for full ones, and thus proceed until the weight is counted by the hundred pounds from one hive in a single summer. Not so with us. Thirty years' experience of my own, and communication with others, give no record of such results. I know of no bee-keeper who could pay all expenses and declare a good dividend after keeping a ten-years account. But we are not professionals, and our system existed long before my day, and has since been followed with very little alteration.

My first practice was to "eke," as we call it, by placing a hive on a rim of straw, 3 or 4 inches deep, of the same diameter as the hive, or on a wooden box, with a board on the top, and holes to let the bees down through the latter. This was intended to be taken off in the autumn, when it was very often full of young bees, and sometimes the queen went with it, and the hive was left to die. Many of us now adopt what we call a "dandy," or little skep, on the tops both of wood and straw hives. This, I expect, is superior. A chance glass hive is sometimes to be seen, and a fancy hive here and there, but I only intend to describe our usual system and its produce. Our skeps are mostly straw, though wood is coming into use, eked or "dandied" as above. As it is now spring I will commence with the season. We feed early, as our judgment or impulse directs. In May we strip off the winter coats and widen the hives' mouths; there is nothing else to be done now but to look out for swarms. Well, if we get one in May, that is early; "a hive in May is worth a fother of hay." June is our swarming month, but swarming is often continued into July. Sometimes we super an old hive to obtain honey instead of swarms, but it seldom answers. Sometimes we keep a hive back thus, and take it with great hopes to the moors; but, lo! it swarms, the swarm is lost, and the hive, half full of drones, is scarcely worth bringing home. During summer, as the swarms fill their hives—that is, top swarms, we put on dandies. These we never change till moor time. Then word comes that the heather is nearly ready. We prepare by looking out for a conveyance, the day is fixed, the full dandies are taken off, empties put on; old hives and aftercasts need none. Well, it is a fair season, what have we obtained? Every fifth dandy has 14 lbs. in it, and all other weights down to nothing are found in the rest. Capital combs, a little broken, honey running out of unsealed combs—not many stings. Come, the bees are all in; bring nails, tacks, cord, packing for holes, and zinc for ventilation, &c. All being right and tied down safely, at midnight we are off twelve or fifteen miles to the stand on the moors. Here we are, the sun is rising; all set, let them out. All dry, not a spoilt hive.

In a few weeks' time the heather is done, we have our bees home—an average season; the old hives will keep with a little help in the spring; the aftercasts up to 35 lbs.; the dandies off top swarms average 14 lbs., a chance one up to 20 lbs. Some of the hives must go to the brimstone pit to help expenses. What are the expenses for a dozen hives? Twelve skeps, twelve barrels, twelve ekes. Oh! but these will last for years, but the next outlay is repeated every year. Horse hire, conveyance, and two men two days to the moors and back, gates, refreshments for men and horses, a shilling a-stand to the shepherd, tacks, &c. I will not put all this into cash for fear the balance be against me, and I drop the fancy, leaving the reader to cast my accounts on his own terms; but I doubt I can afford to give the bees more than an average advantage. There is little more to do now, we hope for a favourable winter, and our season is over.—GEO. WILSON, Whalton.

OUR LETTER BOX.

FOWLS FOR A COLD DISTRICT (G.).—Spanish are not only unfit for such a run as you describe, but they are not fowls to be hatched early. We hatch ours before the beginning of April, and we prefer May. If you want to rear early poultry, and to have all the year round a good supply of useful eggs and table fowls, keep the Brahma Pootra. Spanish fowls feather with difficulty in favourable weather; in bad weather they do not feather at all.

BLACK EAST INDIAN DUCKS (A. W. W.).—It is not a characteristic of the breed to lay seldom; they usually lay freely. The Duck has laid somewhere else, or she drops her eggs in the water. Have her watched.

AIR-FILLED TUMOUR (J. S.).—We have had the same tumour formed both in Spanish and Cochín-China fowls. It arises from an accidental introduction of air between the skin and the flesh. Your treatment by lancing the tumour was judicious. We are sorry to tell you we have always found the operation give only temporary relief.

TURKEYS WITH CLASPED TOES (A. Wynne).—It is a cramp, and arises either from cold damp soil, or from roosting on a boarded, bricked, or stone floor. If they do, remove them, give them strong beer freely, and coop the hen out in the sun. Do not let them go out in the grass at daybreak; the slight frost and heavy dew are both too much for them.

COCHIN-CHINA BANTAMS (Old Subscriber).—Cochin Bantams are exhibited every autumn. They are rather smaller than other Bantams, and we admire them much. We know of no eggs for sale. Those who have the birds ask large prices for them.

SPANISH HENS (W. D. S.).—Spanish hens do not lay early, but they keep on well when they begin. The weather has been till now unfavourable. We make no doubt you will have eggs before you read this. Fowls do not require salt. You cannot tell their exact age. We consider Dorkings and Brahmas preferable to Dorkings and Cochins. The Brahma is a better table fowl than the Cochin.

VENT PROTRUDING (E. F. S.).—Brahma hens often have this unpleasant appearance. It can generally be found by pressing with the finger whether it be solid or merely a sac containing matter. If the latter, it may be opened without risk, but from the outside. If solid it will be reduced by the application of iodine. It has nothing to do with diarrhoea. You will do well to cut off the feathers round the swelling.

COCKERELS AND PULLETS (J. N. C. P.).—It is better to separate birds that are intended to be winners at an exhibition; both cocks and pullets will grow better and larger for it. They will not pierce. The birds intended to be shown together should be put together three weeks before they are shown, otherwise they will probably spoil each other. Beer is better than water; it must be given in the winter for seven or eight weeks, in the summer for three or four.

POULTRY COMPANY (Subscriber).—It failed, and so did the mode of management.

EGGS SENT UNPAID FOR (Ashton & Booth).—You have no remedy except in the County Court; and before you incur any expense, you had better ascertain whether you have been swindled.

ENTRY FEES AT POULTRY SHOWS (J. W. C.).—At some shows the entry fees are too high, and might be lowered to the advantage of all parties, but low entry fees would soon extinguish a poultry show. There would be more entries, and consequently more pens and more food to be provided.

DEAR'S POULTRY FOOD (R. F., and others).—We can give no opinion about it. Mr. Dear should advertise it and state testimonials.

EGGS OF SPANISH FOWLS (W. R. S.).—Advertise them in this Journal. Six shillings for nine, including package, would be enough, as the parents, though pure, are not known as prizetakers.

ASPHALT WALKS (L. M.).—They are in no way injurious to poultry.

TURBIT PIGEON DISEASED (T. W. E.).—You do not tell us quite enough but as you mention there being a disagreeable smell about your bird, we suppose it has canker. Open its mouth, and you will probably find a nasty mass, which you can remove with a thin piece of wood, and then apply caustic to the place. Or apply a strong solution of alum and water with a feather twice a-day; this, perhaps, may dry up the lump and cure the disease, which is, in fact, a putrid sore throat. If the disease be only diarrhoea, put down the bird's throat a lump of chalk the size of a bean three times a-day. Remove the clotted feathers from the vent.

DAMP PIGEON LOFT (A. Constant Reader).—You do not mention it, but we suppose your birds have their liberty, or at any rate fly out into a wired aviary. Bricks make a bad floor, and in your case the drainage is doubtless bad. Take up the bricks, well drain the ground, and lay down boards; for years we have never put on the floor either sand or gravel, still less sawdust—all these make dust and retain damp. We scrape the floor every morning, then sweep it; hence the birds' feathers are never fouled. Gravel, old mortar, loam, and salt we keep in a large pan, and we never have had illness in our loft for the last ten years. A dry floor and top ventilation are best for every reason; we believe also that stone and bricks are both too cold for Pigeons to rest on.

EGG-EATING CANARIES (C. A. J.).—"Have you read Brent's 'Canary and British Finches,' published at the office of this Journal? It might be the sort of vade-mecum you require. Egg-eating is a most disagreeable trait in the character of a Canary. I am afraid there is no cure for it. I have heard legends of eggs fully filled with cayenne pepper and other pungent anti-egg-eating compounds; but when a hen eats both the shell and its irritating contents, which she will do, what is to be done? A breeder here, who is in some respects an eccentric character, says, 'Take the hen out and dash her against the back of the cage two or three times, and she will not eat any more eggs.' It is highly probable it would stop her eating altogether, and no great loss. Such birds are the fly in our pot of ointment. If she is valuable and you are anxious to save her eggs, take them away and put them under another hen. If you are uncertain whether she or the cock is the delinquent, give them an egg to experiment on, and notice which is the offender. In either case you can easily save the eggs by doing as I have said; but if you do not value the hen, give her away. I do not know the cause of this most unnatural propensity. It is fortunately comparatively rare. The shortest cure will be to do as in toothache, have it out. The vexation attending the constant repetition of the offence is not a proper companion for the bird room, neither is the cannibal bird. If the asthmatic cock continue to fill his eggs, go on with him. A little bread and milk occasionally is an excellent diet for him. He will most likely die at the moulting season.—W. A. BLAKSTON."

VARIOUS (O. I. C.).—Keep an Alderney cow; have half an acre of your field in grass, and on the other quarter of an acre grow mangold wurtzel and cattle cabbages. You cannot keep pigs on vegetable marrows. For the eggs you mention apply to any of the well-known breeders who advertise in our Journal; they will tell you the prices if you write to them.

CENTRIFUGAL HONEY-EXTRACTING MACHINE (—).—This machine is a German invention, by means of which honey can be extracted from the combs without injuring them, so that the same combs may be filled and refilled several times in one season, thus greatly economising the time of the bees and the material (honey), from which wax is secreted, and, of course, vastly increasing the honey harvest from moveable-comb hives. It was figured and fully described by Mr. Woodbury, in No. 378 of our New Series.

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 22—28, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
22	TH	Meeting of Royal and Zoological Societies, 8.30 P.M.	59.0	37.1	48.1	21	53	44	6	47	9	43	25	43	10	1 36	112
23	F		59.1	36.6	47.9	21	51	4	8	7	39	3	55	2	11	1 43	113
24	S		58.8	35.8	47.3	16	49	4	10	7	52	4	22	4	12	1 50	114
25	SUN	4 SUNDAY AFTER EASTER.	58.7	37.0	47.4	17	47	4	11	7	13	6	48	1	13	2 10	115
26	M	Meeting of Royal Geographical Society.	58.0	36.3	47.1	18	45	4	13	7	35	7	15	5	14	2 20	116
27	TU	Royal Botanic Society's Show opens.	59.3	35.9	47.6	18	43	4	14	7	52	8	46	5	15	2 31	117
28	W	Royal Botanic Society's Show closes.	60.8	35.7	48.2	17	41	4	16	7	5	10	19	6	16	2 39	118

From observations taken near London during the last forty-two years, the average day temperature of the week is 59.1°; and its night temperature 36.3°. The greatest heat was 82°, on the 27th, 1865; and the lowest cold 18°, on the 21th, 1851. The greatest fall of rain was 1.40 inch.

COOL-HOUSE ORCHIDS.



WINTER Orchids are grown in vineries, green-houses, or other plant structures, these plants are under the same conditions of temperature, atmospheric moisture, and ventilation as the particular subjects for which the houses are set apart. If the principal object be Grapes, as it ought to be in every structure erected for or devoted to Vines, then the temperature, moisture, and atmosphere must be such as are necessary to secure them of good size and quality, and the plants of any other kind which may be grown in the house must be those that will conform to the same treatment, and have no essential of culture at variance with that of the main object for which the house is set apart. As regards the conditions already named, Orchids have a great similarity to Vines; both have a period of active growth, one of maturation, and another of rest or inactivity. In the first period an increase of heat, greater moisture, especially atmospheric moisture, and free ventilation are required for the purpose of securing vigorous growth; and the second period, as respects the Vines, is one when less moisture, greater ventilation, and not less heat are necessary for the perfection of the fruit, and for perfectly ripening the wood. The third period is one needing cold, always having regard to the safety of the plant from frost, and dryness both of the atmosphere and soil, but not to such an extent as to cause the wood to shrivel, or the roots to dry up and perish; but the less moisture afforded in either way to the Vines when in a state of inactivity the more complete will be the rest, and the greater the benefit to the Vines. Now, Orchids need all this, their requirements being—1st, Genial warmth, and a moist atmosphere when they are making new growths, and a continuance of the former with the latter in a less degree until the growths are perfected; 2nd, An abundant supply of water when growing and until the pseudo-bulbs are full-sized, and have become plump and firm; and 3rd, A complete rest, obtained by dryness of the atmosphere, and a lower temperature, with no water at the roots beyond that necessary to prevent the shrivelling of the pseudo-bulbs, and drying-up of the roots.

There are differences, however, between the requirements of Vines and Orchids. Vines delight in light, nothing opaque should intervene between their foliage and the great source of light and heat to the earth; but Orchids are known to succeed best with a slight shade from the direct powerful rays of the sun; therefore they have one condition essential to their successful culture furnished by the Vines—viz., shade, and yet it is not that fixed gloominess given by shading material, as canvas, &c., but the powerful solar rays seem to be lessened or broken, whilst the light and heat are not materially diminished in consequence of their contact with the Vine leaves.

Another difference is that Vines are not injured by exposure to cold that would prove destructive to Orchids. Vines, when well matured, and with a dry soil and atmosphere, are not injured by 32° of frost, or when the thermo-

meter is at zero; but such a temperature would be ruinous to almost all Orchids which are epiphytes, and there are few terrestrial Orchids that would escape from such an ordeal without a thick coating of snow. This difference between Orchids and Vines in the endurance of cold is the only great one in the conditions required by the two in vineries. But the Vines, though they will endure a great extreme of cold, are not benefited thereby; hence they may be kept at a temperature when inactive and leafless which will secure to them a perfect and complete season of rest. Practice has shown us that the Vine will not be excited unduly into growth, nor be deprived of its essential rest, through being kept in a house which does not exceed 40° from fire heat. If the temperature from fire heat often exceed that, the buds begin to swell, and they are deprived of that rest necessary to their making free and vigorous growth—it is adverse to their well-doing, and on that account it is seldom that such good Grapes are grown in houses expected to furnish flowers in winter in addition to Grapes in summer, for the temperature necessary for flowering plants in winter is too high for the Vines, as the temperature for flowering plants must not often be less than 45°, and it is often 50°, and that from fire heat.

There are few Orchids that will safely endure a less temperature than 40° for any great length of time, and yet such ought to be the temperature from fire heat of every vinery during December, January, and February, where the Grapes are not wanted to be ripe before August, the Vines being allowed to start naturally, as they will do, in March, and receiving a little assistance from fire heat in cold periods during spring and early in summer, the house being in winter employed for the preservation of bedding-out plants from frost and damp, or in other words, used as a cool greenhouse. Such a house is only suitable for a limited number of species, but some Orchids will succeed there although no fire heat be given, except to exclude frost and dispel damp. We have vineries that are started early in February, and are assisted with fire heat from the commencement until the Grapes are ripe, say in the end of July. A house of this kind is more suitable for Orchid culture than the first-named; for in February we have a temperature of from 45° to 50° at night, in March one of from 50° to 55°, and by the end of the month or beginning of April it is 60° at night, and this temperature is maintained up to August, and in that month and September the temperature from natural heat alone is seldom below 60°, or at least 55° at night. Over all these night temperatures there is an increase by day of 10° or 15° without sun, or with but little, whilst on clear days the thermometer will often indicate 85° or 90°. During April, May, June, July, August, and September the temperature is that of a cool stove or intermediate house, and in October and February it is that of a warm greenhouse—from 45° to 50° at night, there being but three months in which the temperature approaches to that of a greenhouse.

Lastly, there are vineries started in January having in that month a temperature of from 45° to 50°, in March from 55° to 60°, and from April to September the temperature is seldom, if ever, below 60° at night, and often enough 65°;

though there may be periods when it falls to 55°, or even lower, yet such are of short continuance. The minimum temperature of the house is not attained until October or November, leaving but two or three months out of the twelve in which the temperature is not that of a cool stove, and for six months warm enough for the majority of stove plants; and we see such vineries employed for them in most establishments during the summer months, or until the Grapes begin to ripen and require an atmosphere injurious to many plants. In a house of this kind a great many Orchids will, of course, succeed; indeed, in the last and second, all the Mexican species succeed, for it is a remarkable feature of such vineries that they may be kept at a higher temperature in winter than the first, because the growth of the Vines is perfected earlier, and they are not so much affected by heat in autumn or early in winter as in February or even January: hence a temperature of 45° or 50° in November would not be so detrimental as if it were given in January or February to Vines that start naturally in March, and are not assisted with fire heat, except a little in cold periods.

I think it necessary to make those statements, for many are under an idea that cool-house Orchids mean those for cool greenhouses, which I have not found a fact, and I should be sorry to find anyone commence Orchid culture under so erroneous an impression. They must have a moist warm atmosphere and a continuance of it, such as is necessary to the formation and perfection of a good growth, also a season of rest proportionate thereto, and the temperature at that time must not be that of a cool greenhouse, but be warm (from 40° to 45° at the lowest), and dry.—G. ABBEY.

(To be continued.)

BELSTANE—CONIFERÆ IN SCOTLAND.

HAVING been present at the sale of hardy trees and shrubs, chiefly Coniferæ, which took place at Belstane in the county of Edinburgh on the 25th and 26th of last month, I send you the following jottings made on that occasion, in the hope that they may interest your arboricultural readers, and show southern residents that our Scottish uplands are not less suitable for the growth of many rare and valuable ornamental as well as useful trees, than are the rich plains and meadows of England.

Belstane, it may be premised, is situated about twelve miles westward of Edinburgh, adjoining the north slopes of the Pentland Hills; and the different plantations throughout the estate vary in altitude from about 700 to 900 feet, so that the average may be deemed about the same height as the summit of the well-known and universally admired Arthur's Seat. The prevailing soil of the district is of a heavy tenacious nature, supporting wherever undrained a profuse natural growth of Rushes, Marsh Thistles, &c., but where well improved yielding good crops of pasture Grass and Oats, as well as moderate returns of Barley, Turnips, and Potatoes. Not being sheltered from the here-prevalent westerly winds by higher grounds, the estate has been judiciously intersected with shelter belts of thriving plantations, in one or other of which most of the plants exposed for sale were grown. Mr. Humphrey Graham, the late proprietor, whose lamented death has led to the dispersion of a large portion of the far-famed Belstane collection, was for the last quarter of a century one of the most enthusiastic cultivators of hardy trees in Britain; and although 62½ lots, with from one to a hundred plants in each, were disposed of in the two days of sale, many fine specimens still remain to hand down the name and fame of their planter through, in all likelihood, many generations.

Starting from the Edinburgh station on the clear bracing morning of the 26th in a goodly company of arborists, and proceeding from that of Mid-Calder by omnibus, I observed that notwithstanding snow still lay deep in many gorges and hollows of the Pentland Hills, grain-sowing was far advanced in the arable districts, the farmers having had an almost unprecedentedly favourable state of friableness and dryness in the soil for facilitating their spring operations. Driving through the estate of Meadowbank, which adjoins that of Belstane, strangers were struck with the great extent of hedgerow, roadside, and plantation-margin lines of old Silver Firs, many of which seemed more than 70 feet high, and all appeared as straight and erect as if growing in some sheltered place.

Without following the auction party through the windings and wanderings of the two days, I will only notice the leading features of attraction which presented themselves, and certainly the most prominent were the immense varieties of fine

specimens of *Picea cephalonica* and *P. Pinsapo*, some of the former approaching 20 feet in height, and a considerable number of the latter ranging from 12 to 15 feet, most of these last being as dense and regular in their outline as if they had been clipped or trained into symmetrical cones. Few present had ever seen these healthful Silver Firs in such perfection; and although the sale for the 12 to 15-foot specimens was by no means brisk, individual plants bringing only from 10s. to 21s., their beauty told favourably in the competition for smaller plants growing in the home nursery. *Pinus Cembra* of all sizes under 20 feet were scarcely less admired than the beforementioned, and the larger specimens brought about the same range of prices. Two noble plants of *Abies Douglasii*, "the Prince and the Princess of Wales," planted in 1844 in a belt of Norway Spruce and other common forest trees, which was then twenty years old, now surpass all the others in size, and their appearance induced a brisk demand for a large number of smaller plants, more especially for a considerable quantity in nursery lines, which had been reared from seed collected in Vancouver's Island. *Picea nobilis* and *P. Nordmanniana* were numerous, and many of both were remarkably fine, a few exceeding 12 feet in height, the last ranging from 40s. to 60s. A 16-foot-high *P. Pindrow* was sold for 39s., another 8 feet high 48s., and a 14-foot *P. Pichta* for 47s. Two two-year-old plants of *P. Craigiana*, a seemingly distinct North-west American species, named in compliment to Sir W. Gibson Craig, Bart., were knocked down for 24s.; and the gem of the Silver Fir tribe, a *P. lasiocarpa*, 8½ feet high, fetched 66s. A 3½-foot *Abies Pattoniana*, or Lord Glenalmond's Spruce, was sold for 25s., and twenty small nursery plants of the same sort, but catalogued A. Parryana, for 80s. A new tree Juniper (discovered by Mr. R. Brown, late collector in British Columbia and neighbouring regions for an Edinburgh association), which attains a height of 70 feet, and is named *Juniperus Henryana* in compliment to I. Anderson-Henry, Esq., had a number of competitors, and one lot of nine two-year-old plants was sold for 45s., and another of eight plants for 44s. But the smartest opposition among bidders was for a pair of healthy small plants of the new *Mahonia Balfouriana* discovered by the same collector, and named by him in compliment to Dr. J. H. Balfour, Professor of Botany at Edinburgh; this species is reported as growing to the size of a small tree with a stem 6 inches in diameter, and the couple brought 62s. One plant of Prince Albert Spruce, *Abies Albertiana*, 6½ feet high, brought 17s.; and it was generally remarked that not only this, but all belonging to the Spruce family, not even excepting the Himalayan weeping one, *A. Morinda*, displayed an appearance of healthy vigorous growth, which they seldom retain for any length of time when grown in the lower and drier parts of the country.

In the ever-to-be-remembered disastrous winter of 1860-61 the thermometer never fell at Belstane under about 10° above the Edinburgh Botanic Garden minimum, consequently many plants are still thriving in the former which were then entirely killed in the latter collection, such as *Cupressus McNabiana*, *C. torulosa*, *C. macrocarpa*, *C. Lambertiana*, *Araucaria imbricata*, &c. And another peculiarity was remarked in the *Picea Pindrow*, *P. Webbiana*, *P. cephalonica*, *Abies Morinda*, and some others growing here unchecked, while in lower and warmer parts of the country they are almost annually disfigured by being excited into growth before the cutting late spring frosts are past.

The Norway Maple was a great favourite with the late Mr. Graham, and early in spring as well as through the summer, but especially in the autumnal tints of its foliage, it is a conspicuous object in the Belstane plantation; and I was surprised to observe several more free-growing plants of the *Planera Richardii* than are ever seen in what might be deemed more favourable situations for the ripening of its somewhat late-maturing shoots. Some plants of the *Gaultheria Shallon*, or Salal berry, which were growing under a thickish shade of Fir trees, attracted considerable notice by their seeming adaptation for game cover and the rapid extension of their running roots and offshoots among the grass, moss, and decaying tree leaves; consequently some lots of it sold at fully four times the prices which are occasionally attached to them in nurserymen's catalogues. Upright-growing *Spiræas* of many kinds, some of which have recently been introduced from British Columbia, planted as deciduous cover throughout the woods, showed by their thickness of growth and dry-like appearance how well they are adapted for sheltering game, more especially in wet weather, when the dripping leaves of evergreens are offensive. But among this class of cover plants none came up to the

earliest of fruit-ripening shrubs, the *Rubus spectabilis*, or Salmon berry of North-west America, which had formed itself into thick and wide-spreading patches from 3 to 6 feet in height, on which many of the beautiful pendent reddish purple flowers were fully expanded in the last week of February; and although checked by hard frost shortly after, they were again putting forth a fresh supply of lovely bloom.

In the heavy clayey-like soil of the garden, Alpine Auriculas, the different varieties of *Hepatica triloba*, and that most beautiful of small hardy variegated edging plants, the *Arabis lucida variegata*, were all growing with such freedom and luxuriance as they are never seen to present in the light dry soils which prevail about Edinburgh. In conclusion, the *Berberis Belataneana* deserves a passing notice from the beautiful reddish colour of its young shoots and the robust habit of its growth. It was received among some other foreign seeds, but no record has been kept as to when or where from. The old plant is a noble bush about 10 feet in height; and some nursery lines, which brought but moderate prices, contrasted well, both in beauty and vigour, with others of the *B. vulgaris* grown alongside.—A. G.

HYBRIDISING PELARGONIUMS.

CROSS-BREEDING may be said to be a horticultural game of chance, very speculative, very easy, and very interesting. Hybridising, while it is equally a chance operation, is far more difficult and speculative in its results; strictly defined it is the production of a progeny between two different species, and judging from the results brought before the public, it is but seldom that a hybrid of note is obtained by this process.

My attention was drawn to this subject from a desire to combine the compact habit of growth and free-blooming qualities of a Zonal Pelargonium, with the rich and uncommon beauty of colour of the flowers of Rollisson's Purple Unique, an undertaking declared by a high authority in such matters to be very difficult and uncertain, as it is considered to be impossible to hybridise a variety of the Zonal Pelargoniums with one of the Capitatum species, to which family Unique belongs. Now, here was apparently an insurmountable difficulty, but as I always like personally to test an alleged fact I resolved to try the experiment. Accordingly, last season about a dozen strong plants of Unique were collected to operate upon; and Rebecca was chosen as being of a likely shade of colour to cross well with Unique, if I should succeed in effecting a cross at all. With Rebecca, then, for the pollen parent I set to work; flower after flower, and truss after truss, being carefully but unsuccessfully manipulated. As autumn approached I began to think the authorities were right, and that these two varieties of different species were not to be connected. However, while pollen and bright sunshine were to be had, I determined to persevere, and at length to my intense delight I perceived a seed vessel protruding in an unmistakable manner. This, in time, became fully developed and ripened well, but when gathered it had but one seed—a fine plump seed certainly, but only one. As it was so late in the season I did not venture to sow my treasure, but laid it by till March, when it was sown, and a healthy plant with four or five leaves is the result. These leaves in their appearance certainly follow Unique, and the question forces itself upon me whether after all I have succeeded in obtaining a hybrid. The petals of each flower, before expanding naturally, were opened sufficiently to admit of the removal of the anthers, and as they were taken from the flower at so early a period of its growth, no fertile pollen other than that used by me was likely to be present to mar the effects of my experiment.

As many of your correspondents have doubtless more experience than myself in such matters, I shall be glad to know if I may hope eventually to succeed in my object, which I have no doubt all lovers of bedding Pelargoniums will agree with me to be worth attaining.—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

VINE-GROWING.

THE season of the year brings us again into the train of thought required by our several vocations, and as I am getting my vineries into work one by one, I naturally think over my last year's experiences, that I may either modify or extend these as required. Some of them I am now going to put on paper that I may send them to you, in the hope they may catch the eye of your correspondent "H. S.," and induce him to do the like. When he last wrote he differed from me, but he

impressed me with the opinion that he was too much in earnest to stop short of mastering the subject in hand, and as having too much interest in the practical results to be obtained to be longer on the road than was absolutely required. Last year was not behind its predecessors in the number of discussions upon Vine cultivation, all of which I read and profited by in my own way; the one on the extension system I thought was the most important, and I give my ideas upon its application.

The old plan of growing Vines was the three-rod system, which is, as I understand it, cutting out the oldest cane or rod and growing a new one in its place. By this plan you are provided with two fruiting rods—one that has been cropped upon part of its length and has a new top, and one new cane up to the top of the house, but which you will shorten-in so as to compel it to fruit from its lower half. From the first of these you will obtain some bunches on the two-year-old wood, and also some much better ones from the new part at the top, though you will not have much room to let it grow; but this does not signify, as when it has done its work this year it will be cut out. The lower part of the house will be supplied with bunches by the second cane, which should bear good large ones, which it can support by reason of the vigour it will receive from its growing top, and the Vine, as a whole, will be strengthened by the third new cane coming up from the bottom. The advocates of the short-rod-and-spur system consider that this cutting away of a good long cane the length of the house a great waste of strength, and not needed. Now, the first question is, Which system cuts away the most? In this all prunings should properly be included, and I do not think there is much difference either way. Upon the short-rod-and-spur system there are more bunches, but fruiting off new eyes unquestionably produces the finest bunches. Then where, so to speak, does the shoe pinch? I think it is in the check the roots sustain during the pruning upon the short-rod plan. Most writers say, Prune the end of a spur one leaf past the bunch, and as gardeners always go in for systematically doing their work, all spurs growing at all are pruned just at a time when the roots should be kept going, which is not the case where you have one new cane coming up, and the top of a second left growing.

Now, my experience is that this check is very bad, and in the case of Muscats it often causes them to set badly, as I find the best bunches on spurs that have never been stopped. It is said that as soon as the end of a spur is taken the laterals commence to grow, and that thus there is no check; but this is only the case when they are growing with very great vigour and producing a light crop. The Vine properly under discussion should be one carrying a large crop, and there is no question that the leaves produced by a spur are more likely to strengthen the roots than those produced by laterals. My conclusion is, that you can arrive either way at all the advantages of the extension system. It simply means growing plenty of new strong wood.

The second important question is the preservation of the leaves in a condition to produce roots. Leaves have these functions—producing roots, new wood, and a crop of Grapes in this instance, and lastly, the final stage, ripening the wood made, and elaborating the sap to be laid up for next year. I may be wrong, but it is my conclusion that the root-producing process should go on till the crop is ripe and the last swelling of the Grapes completed, for up to this time the Vine must require all its powers of absorbing moisture. Now, the power the leaves have of absorbing moisture and feeding the Vine must be greatly impaired if they are allowed to be dried and hardened by the sun. I therefore shade them with thin tiffany nailed on outside till the second period has arrived; and as far as is possible without syringing right at a bunch, I have the leaves dewed every evening. As most of my Vines grow upright, and the bunches are shaded by the leaves, this is comparatively easy. When the second period has come, and the crop is cut, we take the tiffany off, and having lowered the temperature syringe as hard as we like without fear of producing any fresh growth; a low night temperature, obtained by admitting air when the Vines and the house are wet, being sufficient to prevent growth notwithstanding high day temperatures. In the case of extra-late houses with fruit hanging this cannot be done. Thin tiffany does not prevent the sun's rays from acting on the house, and, of course, it is only put upon the south side of span-roofed houses running east and west, and upon the west side if running north and south; mine are all span-roofed.

Of temperatures I have no new experiences to offer, this last hot summer being none too hot for me, even when going above

100°, and as it was modified by the tiffany I had no red spider to contend with.

The last discussion has been upon bottom heat, with which all my vineries are provided, and I do not regret the expense. This question of expense was, I think, the point; but the most noticeable feature of the discussion was the free way in which the opponents of bottom heat used the names of the successful prizetakers at the London shows to prove that it was not required, and the discreet silence of these gentlemen themselves. Who can blame them? We have no right to compel them to tell how their success is attained.—G. H.

THE CULTURE OF LILIUM AURATUM.

Procure the bulbs early in January to start with, and if a succession is required, leave a few to bring in in the end of February, taking care that they do not commence to grow before potting.

The soil I find they prosper in is one-half fibry peat and the same quantity of good turfy loam (that which has been taken off a pasture, and laid up in a heap for some time is to be preferred), with a fair sprinkling of silver sand, all well mixed together. Employ clean 5-inch pots, well drained with small pieces of charcoal, placing a little moss over the drainage to prevent the soil from working through; then fill the pots up with the prepared compost, press the bulbs singly into the soil of each pot, and cover them entirely. Water with a fine-rosed can after potting, and then place them in a cool pit, taking the precaution of not over-watering, and at the same time not allowing the soil to become too dry.

When the bulbs have pushed an inch or two high, and the pots become full of roots, repot in 8-inch pots, carefully turn the bulbs out without disturbing the ball, and merely removing a portion of the drainage. The plants will soon attain a vigorous growth, and more attention must be paid to watering them, giving more water as the plants grow, and when approaching to blooming a little weak manure water applied to them twice a-week will greatly assist them. After flowering, gradually lessen the watering weekly.

When the bulbs are at rest, they should be placed in a cool dry pit, not allowing the soil to become too dry, otherwise they are apt to shrivel.—H. C. O.

DOUBLE WALLS OF GLASS.

AFTER having tried for many years numerous plans and experiments for the protection and cultivation of tender fruits, I have come to the conclusion that the double wall of glass is the most simple, satisfactory, and economical of all of my inventions. The ground vinery I did not like, as I had to look down on the fruit, and also had some difficulty in thinning it; and for Grapes I improved on this plan, and brought out the cylinder vinery, and glass screens to be placed opposite walls. All these have now been superseded by the glass wall, which has not only proved a satisfactory invention to the public, but to myself, a very difficult person to please. These walls are made of an indestructible material which never requires painting, and in the glazing there is no putty for the frost to destroy; they are calculated to last one hundred years without repair, barring breakage of glass, a square of which can be replaced in a few minutes. Within the last five months I have altered the plan of glazing entirely, so that during the late high winds no square of glass has been displaced or broken in any of the cylinders or screens.

This invention is very simple but most efficient. Each glass wall somewhat resembles the glass screen to be placed before a wall, only that each glass wall inclines inwards, and is placed opposite the other, so that the base of the wall is 6 feet 6 inches wide, and the opening at the top 2 feet 9 inches. A path runs down the centre, with a raised border on each side. The fruit trees, or Vines, being trained on a trellis under the glass, the whole when seen from one end, with the fruit on each side, has a very business-like effect. The incline forms a sort of coping which prevents the frost affecting the bloom; light not only surrounds the fruit, which becomes coloured and of a piquant flavour all round, but every leaf is subjected to its influence, and has extra quality given to it, and without this quality we cannot ripen fruit in the highest state of perfection. The temperature during sunlight is 6° higher than that of the cylinder, which again is 10° higher than the external temperature.

These walls may be carried round kitchen gardens, or they

may be made in lengths of many hundred feet; and thus a crop of fruit is not only secured, but we have a good walk out of the wind with the pleasing effect of fruit on each side. It is not exactly the form, which does not differ much from the cylinder except in being inclined, but it is the simplicity of structure, as well as the economy and durability, which I now claim.—OBSERVER.

POTTED PEACH TREES AND VINES.

I HAVE never seen anything published relative to the treatment of pot Vines and pot Peach trees that an amateur can understand. I have no doubt that I am very stupid about gardening, as I have bought every book I can lay hold of, and still I am deficient in knowledge of what I want to know. For instance: my Peaches are falling, although they have set well in large quantities. I well syringe them twice a-day, I have mulched the roots, I water them very often, and I give them plenty of air. I light fires at night about eight o'clock for the benefit of the Vines. Is it possible the heat is too great? Then, again, when I light fires at night can I give air as well, and ought I to do so? Do pot Peach trees require liquid manure? What kind is best? How is it made? and How often should it be given, both to Peach trees and pot Vines? If you would only give a short article about these matters, entering into full particulars, you will oblige many amateurs as well as myself.—HALF-PAY.

[If we were to turn over our volumes we think we could direct you to plenty of specific information such as you want, but that we may more readily meet your case, we prefer writing a few sentences, even if they should be a repetition.]

As to Vines in pots, the best way is to raise plants from single buds, inserting them in the first days of the year, each in a small pot, in a strong mild heat, and to repot as soon as the pot is full of roots, repeating this repotting and giving bottom heat until the plant is in a 12 or 15-inch pot. Then encourage growth with plenty of light, and ripen the wood well. Rest the Vine in a dark place after the leaves are yellow, and start it when deemed necessary. For early forcing such pot Vines are again better of bottom heat; but for later work they do very well in the temperature of the house in which they grow, be it vinery, Peach house, or orchard house. The chief object to secure is that the roots shall not be in a colder medium than the expanding buds. Good plants are obtained more easily, but in a longer time, by not growing them so fast the first year, and cutting them down and growing them the second year for well-ripened wood.

In whatever way the plants are obtained, if you take a heavy crop the first year, the Vines will not be worth their room afterwards. If you wish to have the Vines in pots continued year after year, you must be moderate in your fruit demands, say four or five bunches from a strong plant. Such a plant well treated will ripen fruit and ripen wood. If the plants bear a heavy crop, the wood has no chance for another year.

Now, if you had told us how and where you grow your Vines, we would have given minute details, but as it is we can go no further than general rules, such as

1. Never repot a Vine in a pot before commencing fruiting it; that repotting should have been done in the previous summer or early in autumn.

2. Top-dress a pot Vine before forcing it, or growing it for fruit—that is, remove a little of the surface soil without injuring the fibres, and replace it with rich compost, such as two parts of fibrous loam and one of sweet rotten dung. On the surface of this you may safely place half an ounce or an ounce of superphosphate of lime, or ground or bruised bones, the fertilising matter of which will wash down with the waterings.

3. In early forcing a little bottom heat will be useful. If the plants are to come on gradually, and merely under the influence of the season, this is not necessary. We would say the same as to syringing; if we started these Vines in December or January, or earlier, we would moisten the wood to cause the buds to break freely. If we intended these Vines to break with little more than the natural Lent in March and April, we would trouble little with syringing the wood if the floor of the place in which the pots stood were moderately damp.

4. It is always an advantage for the thorough ripening of the wood of Vines in pots that the soil should be rather dry in the last stages of growth, and be kept dryish, not dust dry, whilst the Vines are at rest. In setting such Vines growing at any time, water should be communicated by degrees, and always a few degrees warmer than the soil, until all the soil be moistened

enough to set the roots in vigorous action. After that the roots should have waterings just when they are thirsty, and not otherwise. There is nothing so agreeable to a thirsty man as a draught of pure water; but when satisfied, nothing could be more nauseating than forcing a man to drink water when he did not want it. Just so to a great degree with a plant; whilst the Vine is merely swelling buds it makes small demands comparatively on the roots, and to deluge these roots with water of any kind will be as little pleasant to the plant as forcing a man to swallow water when he is not thirsty. As growth proceeds, more water will be necessary. In fact, the roots being confined to a small place, the soil should never be dry, but it should not be kept like a puddle with repeated waterings. After the shoots are in leaf and the berries swelling, the plants may require watering twice in a sunny day. In cloudy, dull, colder weather they may scarcely require watering twice a week.

5. As to manure-waterings, the surfacing with rotten dung, or ground or dissolved bones, is about the simplest and surest for beginners; but we have proved over and over again, that plants, like animals, love change of food, and that is most easily given them in the shape of manure-waterings. For this purpose it is well to change the liquid manure, and it is a good plan to alternate every such watering with a clear-water watering. Thus, from 2 to 3 ozs. of superphosphate of lime will do for the first gallon of water, and if made in the same vessel, half the quantity would do for the next watering. One ounce of good guano is quite strong enough for a gallon of water, and less for the next, and thus you may estimate quantities, bearing in mind that it is safest to err on the weak side. When we use soot alone, we make a peck do for sixty gallons, with about 1 lb. of quicklime to clear it, and the water comes out like brandy after twenty-four hours; and so on with other manures. A bushel of sheep dung, and half a bushel of deer dung, will make a strong barrel of fifty gallons, and if the sediment remain half the quantity will do next time. Bear in mind that such waterings tell most when the plant is growing vigorously; and that when it is making little wood or just swelling its buds, much manure-watering then induces a state of atrophy from the very excess of nutriment which the plant is unable to assimilate.

We have said nothing of the different modes of preparing the Vines, as yours are already prepared. When we used to grow them in pots rather largely, we tried two modes chiefly, and with about equal success. First we stopped the Vine shoot when from 3 to 4 feet in length, allowed the terminal bud to grow a little, and then stopped again, but encouraged laterals all along the shoot, and only removed them gradually when we wished to ripen the wood. By the second method we allowed the shoots to grow to from 6 to 8 feet long without stopping, merely shortening the laterals to a couple of joints as they appeared, and then these longer shoots we twisted round three or four sticks before starting them to break, and as the buds broke we selected the strongest and best for bearing. There are many details to attend to in these matters, and we do not know on what plan your plants have been prepared.

Now, as to Peach trees in pots, much of what we have said will apply to them also, only they should seldom have anything of what is understood as bottom heat, though, if the roots are plunged, from 2° to 3° above the average night temperature of the house will be beneficial rather than otherwise, and most so when it is desirable to force them early. We would also particularly direct attention to what is said of watering Vines, as we believe many Peach trees in pots are ruined by a continual lashing-on of water.

Next, as to particulars. Your Peach trees have bloomed and set their fruit well, but it is now falling in large quantities. This may be primarily owing to the wood being imperfectly hardened or ripened last autumn. Again, it may be only owing to a healthy action of the plant to do for itself what it expected you to do for it—that is, to free it from a superabundance of fruit, and even of blossoms. One of the best securities for preventing young fruit dropping is to thin out the weakest and worst-placed flower buds. Very likely you will have reason to be thankful to the plant for throwing off what would have been an injurious redundancy. But even allowing that too many have fallen, it may be partly owing to your treatment, “syringing twice a-day, mulching the roots, and watering very often.”

There is no royal road to success, we must be content to notice, and think and act according to circumstances. In an early house frequent syringings before the flower buds expand help to soften the buds and may be useful. In late houses

we consider the practice of no importance. Whilst in bloom a somewhat dry atmosphere is desirable. If apt to be too dry, beginners had better damp the floor of the house instead of using the syringe. When the blooms set, syringing is useful for clearing away blossoms, &c., and is especially refreshing after a sunny day. Syringing, however, in a dull day twice often does more harm than good, as repressing instead of encouraging free transpiration. In dull cold days, when there is not much artificial heat given, the trees would be better without the syringing.

As to the watering very often, unless a considerable amount of artificial heat was given, the weather we have lately had did not allow of watering very often with propriety. In our orchard house pot trees frequently received no watering for eight or ten days. In such fine days as the 8th and 9th of this month, the trees would want water every three or four days. When growing freely and the fruit swelling they would want it more frequently, and that chiefly according to the weather and the sunshine. Do not, if you wish thoroughly to succeed, think it too much trouble to examine your pots with a stick or even your fingers, and do not be satisfied with mere surface appearances. Simple as it is, we find it very difficult to secure this being done by other people. If we see a plant suffering the wickler of the water-pail is ready to say, “Why, sir, I watered it so and so,” and very likely he says what is true—he gave it a touch-and-go as he went along, and the surface soil for an inch or so is damp enough, but try beyond that and you will find the soil and the roots dry. We have known scores of pots of Peaches throw the fruit from this cause alone. We have seen the same result accomplished by keeping the roots constantly in soil saturated with liquid. The deduction to be drawn is simply this, “Do not water when it is not wanted. Do not satisfy yourself with surface dribblets.” After you have fairly started your plants, when you water give enough to reach every fibre of the roots, and then summon resolution to your aid, and give not a drop to them until you find they require it. In some very hot sunny days about and after midsummer, we have sometimes been obliged to water twice a-day. In ordinary weather, water once in two or three days; in dull weather still more seldom. Before growth is proceeding rapidly, provided the soil is first gradually moistened, as there is but little demand on the roots, the waterings should be but seldom, only thorough when given. We are convinced that tons of water have often been applied early, when less than hundredweights would have been more than sufficient. There is no trial-stick so effectual as going down several inches with your finger or a small stick. If the pots stand even partly above ground, a sharp stroke or ring on the pot with a stick or your knuckles will indicate the state of general moisture within. If the ringing is followed by a sharp clear sound, something like an empty vessel, then water is wanted; if a dull heavy sound, pass that plant by—a much more difficult matter than is generally imagined. Out of one hundred men you will not find above from five to ten who will do that, simple as it is, without a vast deal of trouble. Watering merely the surface soil of pots—watering everything as you go—are the two most fruitful sources of injury to plants in pots.

Again, as to heat and air, we presume as you only light fires about 8 p.m. that you do not give much heat. As to whether you give too much to Peaches we cannot say, but it is well that when Peaches are merely swelling their buds the temperature from artificial means should rarely exceed from 45° to 50°, when in bloom from 50° to 55°, and after setting from 55° to 60°. In all these cases, provided air is early given so that the temperature may rise gradually, the latter may rise from 5° to 15° more from sun heat, and you may shut the house at from 3 to 4 p.m. with the thermometer all that higher than the night temperature, and then after a sunny day is the best time to syringe, as the moist heat thus produced is relished by the trees and disliked by all insects.

As to air at night, a little, especially at the top of the house, will be useful. We seldom in the early part of the season give much ourselves, because coals are expensive, but if we lived near a coalpit we would never shut up any house quite closely. We combine economy and utility by shutting up where heat is wanted at night, and giving a little air early in the morning. Of our orchard houses we shut up one early in the afternoon, to take advantage of the husbanded sun heat. As we wish the other to come in later we leave all the air on in favourable weather until late, and if the weather is fine and mild, leave it so all night. To simplify the matter, bear in mind that a small

quantity of air will prevent a stagnant atmosphere, and that there are some trees, such as Cherries and Apricots, that will not set their blooms freely in a stagnant atmosphere, whether the temperature be low or somewhat high. In such cases a little air will make all the difference. If you choose to give heat enough to keep an average temperature of 50° at night for your Peach trees in pots now, give air at night; if not, shut up, and give air early in the morning before the sun touches the house much to raise it.

This is a simple but a great point, and one which many of our amateur friends are slow to learn. Suppose, now, that we had a lean-to Peach or orchard house that in the beginning of April averaged from 45° to 50° at midnight, and the house closely shut up; provided we gave a little air, even an inch or two, at the top of the house before the sun raised it 5°, we should consider that house quite safe, though the sun heat raised the temperature gradually to as much as from 80° to 85°, and even 99°, although we should give more air before it rose quite so high. In such a house, however, with no air given, the rise from 45° or 50° to 75° or 85° would be very likely to cause most of the young fruit to fall, and so scald the trees as to make them liable to casualties and the inroads of insects. We have seen houses thus left shut up until, say, ten or eleven o'clock in a bright morning, and then rushed out the parboiling moist air, and in rushed the cold dry air as the ventilators were opened at last right fully. In such a case of forgetfulness little air should be given at first, floors damped, &c., and the amount of air increased by degrees. We once saw a beautiful house of Peaches where almost every young fruit dropped solely from this cause, though it was never assigned as the reason. One advantage of giving air all night is, that there is not the same necessity for early air-giving in the morning; and if even the morning were bright there would be no danger from confined heated vapour in the house.

We do not think we can enter into the question of mulching and manure-waterings more than was stated in reference to Vines, only that as a general rule liquid manure should be weaker for Peach and Nectarine trees, &c.; and though it may be a prejudice of ours, we prefer the manure to be clear rather than muddy. Where mulching is used we think it a great advantage, as it acts as a filter to the manure water. We think manure water should seldom be used oftener than alternately with clear soft water. It is always best to err on the side of weakness. As a rule, manure-watering is of little benefit until growth is proceeding freely. Gorging the roots with rich liquids before the buds are more than opening is very much the same as the practice of those nurses who put pieces of pork and salmon within the lips of very young infants.

THE MYSORE AGRI-HORTICULTURAL SOCIETY.

On the afternoon of the 5th of February another of the shows periodically given by the Agri-Horticultural Society came off at Bangalore with great success. Although the day was hot and sultry, the public put on its best manners and monstred strongly, evidently determined to enjoy the treat provided for it. The ladies, the Chief and Judicial Commissioners, the General of the division, who was employed part of the time in awarding prizes, Majors Puckle and Boddam, and "every one else," were present; and although the exhibition building was rather too small to walk about in, comfortably, considering the large number of people present, there is no reason whatever to doubt that all enjoyed themselves amazingly. The show of fruit was excellent. The Apples and Pears especially excited great admiration, and were, we are informed, sold at very high prices after all was over. In the vegetable department, the Cabbages, Pumpkins, Knol-Khol, and Carrots outvied all previous competition; and while there was a falling-off in flowers, it was a wonder that even such a good collection as was exhibited could have been got together during this season of the year. We also noticed a few good samples of silk and cotton. Altogether the Society are to be congratulated on the success of the Show. The natives appear to thoroughly appreciate the benefits of raising good agricultural and horticultural produce, and we believe we are only stating the truth when we say that our local Society is in a fair way of proving itself the most successful in India. The prizes were all gained by native mallees (gardeners).

The Apples and Peaches were particularly fine; the latter were allowed to ripen on the tree, and were in consequence of excellent flavour and bouquet, a great improvement in this respect over last year. There were no Pine Apples, and the prize was given for Pears in consequence. The medal was not awarded for a general collection of fruit, as there was not one considered worthy of it, but the money prize (second) was given for a collection of seven kinds of fruit. The Strawberries were finer than were exhibited last year. There was

some difficulty in deciding who was entitled to the above, so close was the competition. For the rest of the prizes there was not the competition that was expected, but the Committee can safely say that there is a steady progress in fruit culture, which they hope will yearly increase. The cultivators are beginning to appreciate the value of quality over quantity.

Kitchen Vegetables are also well grown, and prizes were given for Potatoes, Savoy, Red, and ordinary Cabbages; Brussels Sprouts, Cauliflowers and Broccoli, Carrots, Turnips, Knol-Khol, Beetroot, Lettuce, Endive, Artichokes, Jerusalem Artichokes, Celery, Onions, Vegetable Marrows, Cucumbers, Radishes, Kidney Beans, Asparagus, Peas, Tomatoes; Thyme, Parsley, Mint, Sage, &c., in bunches, Sweet Potatoes, Capsicums, Nepal Chilies, Pumpkins, Snake-kai, and Brinjals.

In flowers, prizes were given for Zonal Pelargoniums, Begonias, Tropæolums, Pansies, Delphinium formosum, Common Larkspurs, Cinerarias, Petonias, Stocks, Asters, Silver-foliaged plants, Lobelias, Antirrhinums, Phloxes, and New Annuals.

ROYAL HORTICULTURAL SOCIETY.

SECOND SPRING SHOW, April 17th.—On this occasion there was a good display, which occupied a double row of staging along the centre of the Conservatory, one side being wholly filled with miscellaneous collections, the other by plants for which classes were specially provided; and although the exhibitions in each class were not numerous, the deficiency in this respect was compensated by the long array of interesting plants contributed by Mr. Bull, Mr. Williams, and Messrs. Lee and by Messrs. Lane's beautiful collection, which, augmented in number, still adorned the adjoining arcade. There, indeed, were to be found the only Roses shown, and always welcome they are. Leaving these, however, the Cinerarias, and the Auriculas to our coadjutor, "D., Deal," we will proceed to the other features of the Show.

The Azaleas afforded a very effective display, their bright colours being especially cheering in such a dull, wet day as that of the Show; it was too early for those gigantic pyramids of bloom which are exhibited later in the season to make their appearance—some of them, perhaps, will never do so again—but there were, nevertheless, some large specimens well covered with flowers. In the nurserymen's class for six, Mr. Turner, of Slough, was first with plants grown in a form altogether different from the one usually seen at exhibitions, which has been stigmatised as the crinoline shape. Mr. Turner's specimens, on the contrary, were round-headed dwarf standards, on stems measuring about 21 inches from the soil to the forking of the branches, about a foot of clear stem being visible from the outside, and having globular heads 2 feet in diameter densely packed with flowers, so much so that nothing was visible but flowers, except where a few sprays with bright green leaves had been purposely permitted to escape. The varieties were—Etendard de Flandre, white streaked with red; Duc de Nassau, rosy purple; Hooibrenkii, purple; Souvenir de l'Exposition, lilac, bordered with white; Rosea odorata, rosy crimson, and Baronne de Pret, purplish rose. Messrs. Dobson & Sons, of Isleworth, were second with small plants, the best of which was William Bull. In the amateurs' class for the same number of plants, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park, was first with Stella, orange scarlet shaded with violet, a fine variety and in fine bloom; Prince of Wales, with small bright rosy purple flowers; Etiole de Flandre; Holford; Criterion, a fine mass of flowers; and Glory of Sunninghill. Mr. Wilkie, Addison Road, Kensington, was second with Perfection, rose-coloured, the plant rather straggling; Marie Vervaeke and Fielder's, white; Petuniaeflora, Burlingtonii, and Admiration. The third prize went to Mr. Fairbairn, gardener to the Duke of Northumberland, Sion House, for good-sized plants of Iveryana, Alba, Souvenir de l'Exposition, Triumphans, and others. Of single specimens only three were shown. A well-bloomed conical-headed standard of Sir Charles Napier, from Mr. Wilkie, took the first prize, Mr. Turner being second, and Mr. Wheeler third, the former with Marie Vervaeke, grown as a round-headed dwarf standard, and forming a beautiful mass of white flowers, occasionally flaked with red.

Of Calceolarias, the only collection came from Mr. James, gardener to W. F. Watson, Esq., of Isleworth, who received a first prize, the plants being healthy, well grown, covered with flowers, and of an excellent strain. This flower being seldom raised otherwise than from seed, there would be no advantage in particularising the names of the varieties shown. Their colours were pale cream spotted with crimson, dark crimson veined with yellow, yellow spotted with crimson, and crimson veined with yellow.

Camellias were but poorly represented, both as regards plants and cut blooms. Mr. Wilkie took the first prize for each, and Mr. Fairbairn the second for cut blooms.

Cyclamens were again shown in fine condition by Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, whose specimens of this flower have placed him in the front rank wherever they have been shown. His neighbour, Mr. James, was second with very good plants; and Mr. Fairbairn was third with plants in excellent bloom, but their beauty somewhat marred by the sun or moisture, probably a result of the very hot sun which we have lately had. Mr. Turner also contributed some nicely flowered plants.

Miscellaneous collections, as already remarked, formed a large

portion of the Show, and a very interesting portion too. Mr. Bull took the first prize for an extensive collection principally consisting of Palms, Dracaenas, Camellias, Azaleas, and Orchids. Among the last were *Oncidium serratum* with large, crisped, brown and yellow flowers; *Odontoglossum cristatum* with four spikes, 18 inches long; a fine spike of *Oncidium Philipianum*, *Dendrobium Dayanaum*, *Cypripedium candatum* with two good flowers, C. Lowii and C. Schlimii with a white and rosy-purple slipper. Of plants ornamental by their foliage there were *Ficus eburnea*, with large white-veined leaves; *Bigonia mirabilis*; *Alocasia Veitchii*, very handsome; *Gecconia Seemannii*, an extremely ornamental dwarf Palm, having the young foliage tinged with reddish bronze; *Colons Duke of Edinburgh*, and *Anthurium magnificum*. *Anthurium Scherzerianum* displaying two of its brilliant scarlet spathes, *Andromeda formosa* with large clusters of white flowers tinged with pink, and the pretty bluish hybrid *Rhododendron Countess of Haddington*, together with *Azaleas*, *Camellias*, and the *Orchids* already mentioned, made an effective show of flowers. Several second prizes were awarded, one of which was taken by Messrs. Lee, of Hammersmith, with a collection consisting of Palms, *Dracaenas*, *Hammert-leaved Pine Apple*, *Araucaria Rulei*, fine specimens of *Gleichenia semivestita*, and *Yucca filamentosa variegata*, a painful of *Sonerila margaritacea* in beautiful condition, *Eriostemon pulchellum*, *Franciscea confertiflora*, and other plants. From the same firm came also a standard *Rhododendron Venus*, with a very fine head of white flowers tinged with blush, and a variety of *Thuja Lobbi* with well-marked effective golden variegation. Mr. Williams also received a second prize for a similar collection containing several handsome Ferns and other fine-foliaged plants, among which may be mentioned *Yucca Stokesii*, *Dasylirion acrotrichum*, the *Variegated-leaved Pine Apple* in fruit, and remarkably fine specimens of *Agave filifera*, and *Todea superba*, the last most beautiful. There were also several *Orchids*, as *Vandas*, *Cypripediums*, and *Odontoglossums*; besides *Eriostemons*, *Azaleas*, *Anthurium Scherzerianum*, &c.

Smaller collections were contributed by Reeves Brothers, of Notting Hill, and Mr. Wilkie, to each of whom a second prize was given, and consisted of *Pelargoniums*, *Mignonette*, *Cinerarias*, and *Spiraea barbata* or *Hoteia japonica*; Mr. Wilkie sending in addition *Eucharis amazonica*, *Ivoras*, *Franciscea calycina*, a *Hydrangea*, *Deutzias*, *Rhododendrons*, &c. Messrs. Reeves also had an extra prize for six excellent pots of *Lily of the Valley*; and similar award was made to Mr. Roberts, of Holme Park Gardens, for *Neapolitan Violets*, the same exhibitor sending also *Solanum capsicastrum* and *Mignonette*; as also to Mr. James, for hardy Ferns. Mr. Ware, of Hale Farm Nurseries, Tottenham, contributed several baskets of hardy spring flowers for which he obtained a third prize. One of these was *Primula cortusoides amena*, gay with its saucer-shaped purplish lilac flowers; another, *Trillium grandiflorum*, conspicuous by its large white flowers; while other baskets were filled with different single and double *Primroses*, varieties of *Iris pumila*, and one large basket contained *Muscari lotryoides*, *Orchis latifolia*, several species of *Anemone*, and other gems of the herbaceous garden. Messrs. Salter & Son, of Hammersmith, had likewise a third prize for a pretty collection of hardy variegated plants. These consisted of the neat little variegated varieties of *Anthriscia deltoidea*, *Arabis alpina*, and *Sedum acre*; yellow-variegated *Balm*; *Beta chilensis*, of which Messrs. Salter showed splendid examples last year; variegated *Lily of the Valley*, also very ornamental; *Funkia undulata variegata*, *F. albo-marginata*, and *Hemerocallis Kwanoo* broadly striped with white; *Arom maculatum* and its variegated form; *Arom italicum variegatum*, a handsome specimen, the leaves marbled with pale green, and a pretty little striped *Millet*. The only other subjects which require mention were basketsful of *Pelargonium Pillar of Gold*, with bold golden foliage, and of *Colons Princess Royal*, both from Mr. Turner; and Miss Neale, of Norbiton, sent some beautifully skeletonised leaves, fruits, and seed-vessels which well deserved the extra prize awarded them.

THERE could not possibly be a greater contrast between the Exhibition held on Saturday and the one held in March, whether we regard the number of plants exhibited or their quality, and I do not recollect in my experience ever seeing—in some classes at least, a poorer display. The *Azaleas* were not up to the mark, there were no pot *Roses* of any kind, and *Auriculas* were excessively poor. Why all this, beats my comprehension. It was said the prizes were too small to invite pot *Roses*; but, then, at the last show there were two collections, when no prize at all was offered. *Auriculas*, I believe, are feeling the effects of the last summer, as there is a want of vigour (not positive unhealthiness), about them which has completely spoiled the bloom about London and in the south of England. I think, too, that the novel method of arranging the prizes, and the mixing-up of the nurserymen and amateurs, may have deterred some exhibitors. There were only two collections, if, indeed, Mr. James's could be called a collection, as it had three plants with one pip out, and not one good truss in the lot. Mr. Turner's comprised fair examples, but no more, of *Warris' Union*, *Turner's Competitor*, *Wild's Bright Phœbus*, *Lightbody's Countess of Dunmore*, *Chapman's Sophia*, *Oliver's Lovely Ann*, *Truill's General Neill*, *Smith's Trafalgar*, and *Turner's Colonel Champneys*. Mr. James was second with *Prince Albert*, *Lady Jane Grey*, *Catherine*, *Ann Smith*, *Smiling Beauty*, *Conqueror of Europe*, *Wild's Bright Phœbus*, and *Imperator*. In the *queer* class—*Selfs* and *Alpines*, the same exhibitors staged plants. Mr. Turner's were Mid-

night, *Tenniel*, *Prince Albert*, *Jessie Elgin*, *Metaphor*, *George Lightbody*, *Millaia*, *Neatness*. He had, besides, a nice collection of *Alpines*—*John Gair*, *maroon*; *Arthur*, in the style of *Conspicua*; *Borealis*, *maroon*; *Ettie*, shaded lilac; *Neptuno*, *maroon*; *Emblem*, *purple*; *Edgar*, *crimson*, &c. A very fine seedling *Auricula* was exhibited by Mr. Butcher, called *Mrs. Butcher*, a green edge, in the style of *Truill's General Neill*, a strong-constituted plant, and one that will prove itself to be one of our best green edges, unless I am very much mistaken. *Cinerarias* were poor, and by no means equal to what we used to see in days of yore. *Polyanthuses* were also exhibited, but were not of any note, and, in fact, a more nice collection of florists' flowers I do not remember to have seen.—D., *Deal*.

FRUIT COMMITTEE, April 20th.—G. F. Wilson, Esq., F.R.S., in the chair. Messrs. Ewing & Co., of Norwich, sent fruit of a seedling Apple called *Lord Stanley*. It is a rather large, conical, and bluntly angular Apple, yellow, and much covered with patches of russet. The flesh is yellowish, firm, bristly acid, and with a good flavour. It keeps sound till May. The Committee were of opinion it is a good Apple. Mr. Gilbert, gardener to the Marquis of Exeter, Barghley, sent fruit of a seedling Apple of good size and fine colour. The skin is almost entirely covered with dark red, and has somewhat the appearance of *Norfolk Beefing*, though quite different. Mr. Gilbert also sent a pie made of the fruit; but in the opinion of the Committee it is a variety not equal to many others in cultivation. A special certificate was awarded to Mr. Gilbert for a very nice collection of vegetables and salads.

Mr. Gardiner, gardener to W. E. P. Shirley, Esq., Eaton Park, Stratford-on-Avon, sent a bunch of *Lady Downe's* and *Kempsey Alicante Grapes*, both in excellent condition and rich in flavour. The Committee unanimously awarded a certificate of commendation for the excellent way in which they had been kept.

FLORAL COMMITTEE, April 20th.—The subjects for the Committee's inspection were not very numerous. As time hastens on for the public exhibitions a due preparation is necessary, and, doubtless, the exhibitors are well considering that.

Messrs. Veitch contributed largely; a fine collection of *Orchids* received a special certificate, and a collection of other plants a special certificate. Among them were some very fine specimens of that beautiful spring-flowering *Primula—cortusoides amena*; a new variety called *hacina*, with light grey flowers, was awarded a first-class certificate. *Primula cortusoides grandiflora rosea*, a pale variety, was also shown by the same firm. *Davallia hemipetala*, *Crimm McArthur*, a fine flower, and several other beautiful specimens were in this collection.

From the gardens at Chiswick came two seedling *Caladiums*; *Golden Queen*, and another with a golden ground suffused with rosy red, were much admired, and it was requested that they should be sent again. Four fine specimens of *Primula cortusoides amena*, most beautifully grown, were awarded a special certificate for good cultivation. This exquisite flower has never been seen in such perfection. Mr. Robert Veitch, Exeter, sent four small plants of *Rhododendron Excelsior*, a beautiful deep purplish rose. It was not stated whether a hardy variety or not, on this must depend its value. Mr. Lorrimer, gardener to E. Salt, Esq., Shipley, near Leeds, sent a beautiful collection of cut *Orchids*, which was awarded a special certificate. Messrs. Smith, Dulwich, sent a collection of well-bloomed plants. Among them were some seedling *Azaleas*—one was of a fiery red, but not equal to other varieties—*Acacia hastulata* with very insignificant flowers, three or four *Ericas*, and other plants. A special certificate was awarded the group. Mr. Robert Warner, Broomfield, Chelmsford, brought a cut specimen of one of the very best varieties of *Odontoglossum Alexandrae*; it received a first-class certificate as *Odontoglossum Alexandrae var. Warneri*. Mr. C. Baxter, gardener to C. Keiser, Esq., Broxbourne, exhibited a fine group of seedling *Amaryllis*. *Mdlle. Tietjens*, white ground, carmine stripe or band, received a first-class certificate; and *Olga*, white ground, broad deep rosy stripe, also had a first-class certificate, as well as *Alexandra*, in the same style, with bright broad bands. *Duke of Edinburgh*, a deep dark red flower, had a second-class certificate. This was a very fine collection of seedlings, though some of them were deficient in form.

Mr. Wm. Paul again exhibited his Hybrid *Perpetual Rose Prince Leopold* as a climbing Rose, but it must be seen in the proper season to decide its merits; it is a first-rate flower, and if it establish its character as a climber will be a great acquisition. Another seedling Hybrid *Perpetual Rose* with bright rose-coloured flowers, not named, is grown on trial. *Rose Thyra Hammerick* is a great continental favourite, but must be seen in the Rose season, to take its place among others. Mr. Butcher was awarded a second-class certificate for a seedling *Auricula*, green-edged, very bright green, with a good centre.

Messrs. Downie, Laird, & Laing sent a new continental *Caladium*, *Duc de Ratibon*, very promising, though not very distinct from others in cultivation, and it must be seen again. From the same firm came *Ficus Chauvieri*. Mr. Z. Stevens, Trentham, sent three seedling *Azaleas*, with by no means bad flowers, but not up to the standard, nor sufficiently distinct. That named *Thackeray* was a fine bright red flower, but very crumpled and rough in outline. Smoothness and firmness of petal are indispensable in the *Azalea*. Mr. Turner, of Slough, sent a nice collection of seedling *Fancy*, or, as sometimes called, *Alpine Auriculas*. Among them were some remarkably beautiful flowers not sufficiently distinct from those of last year. Among

them a self, Daybreak, was superb. Godfrey, Arthur, Charley, Marvel, and Stella were much admired. A special certificate was awarded them. Mr. C. Edwards, Saltash, Devon, sent a bright rosy seedling Rhododendron, Miss Coryton; some doubts were expressed as to its usefulness as a hardy variety. Mr. Hooper, of Bath, exhibited two stands of five dozen Pansies containing some fine varieties; among them a Fancy called Prince of Wales, having a white ground with an immense dark blotch in the centre, was much admired; when seen again it will probably have a certificate. It too much resembles a variety called Princess of Wales, but is a fine bold flower. Messrs. Barr & Sagden exhibited a large collection of Narcissus; these were sent to ascertain true names and species. The special prize offered for these flowers in 1870 will, we hope, bring to light many good kinds which have almost been lost sight of. As they flower at different periods, a succession of exhibitions of various kinds must be carried on to ascertain the finest collection. One day's exhibition could not decide this point. Mr. Elliott, gardener to N. H. Barton, Esq., sent a collection of six variegated hardy plants not in condition to be dealt with.

GENERAL MEETING, April 20th.—J. Bateman, Esq., F.R.S., in the chair. After the election of seventeen new Fellows, Major R. Trevor Clarke, in the absence of the Rev. M. J. Berkeley, directed attention to the varieties of *Primula cortusoides* as exhibiting great diversity, great beauty, and great divergence from the wild form of the plant, and as being interesting from showing the great capability of the genus for producing variations. As a further proof of this fact he might also adduce the *Auriculas* exhibited, differing so widely as they did from the wild plant of the Alps. Major Clarke then brought before the meeting cut specimens of several flowers from his own garden, among which were *Bellevalia romana*, and a double *Oxalis*, usually considered a double form of *O. cernua*, but differing from it in being spotted at the base of each leaflet instead of the leaves being spotted with black in all directions. Of *Lilium Thomsonianum* he had brought a plant, differing only from that shown a fortnight previously in the flowers being a little higher coloured; and he might add that Dr. Thomson, to whom the plant then exhibited had been referred for determination, stated it to be the true *Lilium Thomsonianum*.

Mr. Bateman, after a few remarks on *Cactus senilis*, which was shown in one of Messrs. Veitch's collections, noticed briefly the most remarkable of the Orchids. The successful flowering of the elegant *Burlingtonia fragrans* was said to depend on keeping it not too hot, and giving it a season of drought. He had found it succeed well year after year in what is called a Mexican house. The collection from Mr. Lorrimer, gardener to E. Salt, Esq., was then referred to, and an *Oncidium*, said to be *O. concolor*, a fine variety of *Lycaste Skinneri*, and two or three *Cypripediums* were pointed out as well worthy of attention. In connection with the *Cypripediums*, Mr. Bateman said he hoped that by-and-by as many as twenty species would be seen at our exhibition; and he was happy to be able to state that there was now a remarkably fine one on its way from Costa Rica, the flowers being very large, and produced in great numbers. *Masdevallia Veitchiana*, shown by Messrs. Veitch, was next noticed as presenting the most charming mixture of scarlet shot with the most lovely crimson Mr. Bateman had ever seen. This, the richest in colour of all the red-flowering Orchids, was also that which was found nearest the snow-line, so that no difficulty was anticipated as to its cultivation becoming general when once the proper way to grow it was found out, and it would then probably be of all Orchids the favourite.

Mr. Bateman next pointed out the most remarkable of the Orchids composing the lovely bouquets from Mr. Anderson, gardener to W. Dawson, Esq., of Meadow Bank, near Glasgow, making at the same time brief remarks on the culture of some of them; likewise Messrs. Veitch's *Oncidium sessile*, a plant seldom exhibited in flower because generally kept too moist instead of the contrary. In noticing the beautiful hybrid *Rhododendron Countess of Haddington*, of which one of the parents was *R. Edgeworthii*, Mr. Bateman said it only gave a notion of what might be expected when the Sikkim *Rhododendrons* had been hybridised.

Mr. Bateman, in calling upon Mr. Anderson to come forward and receive the Bateman Challenge Medal as the most successful exhibitor of Orchids, expressed some disappointment at the prize not having brought forward more amateur exhibitors, for after Mr. Veitch took it and had to retire from future competition according to the terms on which the medal was offered, Mr. Anderson took his place, and would have to retire in turn. Some other plan must, therefore, be devised. Mr. Bateman next described his surprise on seeing for the first time the collection at Meadow Bank, to find it so extensive, and in such admirable condition, complimented Mr. Anderson on not keeping his knowledge of cultivation to himself, but giving the public the benefit of it through different horticultural periodicals, and concluded by saying that Mr. Anderson could not do the Society a greater service than by sending such specimens of Orchids as he and he alone could grow. He (Mr. Bateman) had much pleasure in presenting Mr. Anderson with the Challenge Medal, which he hoped would be to Mr. Anderson's children a mark of the recognised skill of their father as the first Orchid-grower of his time.

Mr. Anderson returned thanks in an appropriate speech, remarking that he considered honours of the kind invaluable, and far before the mere prizes at ordinary exhibitions; at the same time if the great London growers had come forward he should not have been able to

have competed with them on account of distance. Challenge medals such as that he had received did much good, and he should like to see them extended to other objects besides Orchids. The culture of these was to a great extent a matter of temperance, and more were lost owing to want of attention than by any other cause. The love of Orchids was increasing, and the ambition of those desirous of growing them might be gratified at small cost. For instance, Ferns and Orchids were capital companions.

Mr. Bateman having drawn attention to an unknown Orchid sent to Kew from India, and which was the only surviving morsel in Europe, announced that the next meeting would be held May 4th.

AUCUBA, VARIETIES AND FERTILISATION.

"GULIELMUS," in his instructive paper on the *Aucuba japonica*, does not allude to trifoliate varieties. From two hundred seedlings I have a dozen plants of this form, which seems to be quite permanent.

M. Carrière's difficulty in being unable to explain the cause of his female *Aucubas* bearing fruit, though the flowers had fallen weeks before those of the male plant had expanded, appears to me to arise from a latent vitality possessed by the female when kept apart from the male. Under this condition, after the fall of the petals, berries are apparently formed precisely the same as if fecundation had been effected, and for weeks they retain a healthy appearance, during which period, I presume, they are susceptible of fertilisation.—A. C.

SETTING GRAPES.

In reference to Mr. Nicholls's remarks on this subject (see page 237), allow me to say, that it was the young shoots of the current year that I meant when speaking of tying them in. As I never bend the Vine rods here with the object of making them break evenly, it did not occur to me to speak of the effects of bending the old wood, but I would say, Let the whole Vine lie in as easy and natural a position as possible.

Mr. Record seems to fear that the cure would be worse than the disease, as the shoots, if left untied, would come in contact with the glass and be chilled; but I think I said, "Leave the shoots as far as possible undisturbed till the setting is over," meaning, of course, that no unnecessary tying need be resorted to till then. I never saw any damage done to the foliage of Vines unless the leaves actually touched the glass, and the tying of the shoots back just far enough to prevent this would not do much harm; it is the bending and twisting of them into their permanent position on the wires that I object to, and which I am confident has a bad effect. I am certain, also, that when the shoots are left free the bunches manifest no disposition to curl or twist their footstalks, as they often do in their efforts to turn themselves to the light when the shoots have been moved.

Mr. Nicholls complains of his Muscats not setting well at the points of the shoulders and the tips of the bunches. This is a very common occurrence, and with due respect for Mr. Nicholls's opinion, I think it is a sign that bad setting is the result of weakness. Muscats always set best about the shoulders, and in the body of the bunches near the main stem. No doubt heat has much to do with it, and a high temperature is necessary when the Vines are in bloom; but it would seem as if the vital force were expended or weakened before it reached the extremities of the bunch, and the result is imperfect fertilisation at these parts, and this is always more or less apparent according to the vigour of the Vines. The same thing is observable among Currants and other plants which fruit in bunches, as, for instance, the *Musa Cavendishii*, which continues to set its spiral rings of fruit in succession, just in proportion to the vigour of the plant. I agree with Mr. Nicholls, that old Vines, as a rule, set their fruit best, but I have a strong conviction that a vigorous constitution and thorough maturation of the wood, are the most essential conditions under any circumstances for insuring a healthy fertilisation.

With regard to the custom of bending the Vine rods down at the points to induce a regular "break," I think if Mr. Nicholls try the experiment he will find that his Vines will break just as well if left in their natural position, if other conditions of temperature and moisture be attended to, and the ripening of the wood, as I have proved again and again; and I could show at the present moment Vines at various stages upon which from 4 to 6 feet of young wood has been left, which have broken vigorously at every eye, though they have never been moved out of their perpendicular position. Heat and moisture are the principal agents in this matter,

and I may add light. To prove this I last year made the following experiment:—In pruning a house of young Muscats of the first season's growth, I left one vigorous rod, 18 feet in length. When the house was started I laid this Vine horizontally along the front of the house, having the bottom half of the rod directly above the pipes, and bending the top half out so as just to be clear of the warm air-current, but keeping it on the same horizontal level. The bottom half broke first and regularly, and when the shoots were about an inch long I laid the top half in above the pipes also, and the rod broke evenly its entire length, with the exception of a few buds on that part of it which lay over the space between the evaporating-troughs, and which had not been subjected to the constantly ascending vapour. Last November I pruned-in the shoots of the same Vine to one eye all along, and this season I left it in its natural position—i.e., tied to the wires under the roof, which has a pretty sharp angle, and it has broken as evenly as before, from top to bottom, but in consequence of its being cropped heavily last year by way of experiment, it has shown no fruit, and the shoots seem to be weaker.—J. SIMSON, *Wortley Hall*.

GARDENING IN TOWNS.

In confined smoky towns no plants flourish and bloom so well as the Chrysanthemums. I have grown them in the Temple Gardens nearly thirty years as the principal town flower. They are green in the beds nearly all the year, and bloom freely in October, November, and the beginning of December, when no other flower is to be seen.

The treatment I give them for the beds and borders merely consists in dividing the roots in the spring, and replanting after digging and manuring the borders. I water in hot dry weather through the summer, tying the plants up to strong stakes, and a little mulching of rotten dung in August will be found of great assistance.

The Chrysanthemums which I grow for bedding are chiefly Pompons; they are propagated in June by cuttings, and planted in the beds in September. They bloom very freely, and if watering is properly attended to, I find they scarcely show any signs of the moving. They keep up a succession of bloom in the beds to the end of November. The other plants used for filling these are Crocuses, Hyacinths, Tulips, Annuals, Pelargoniums, Calceolarias, Verbenas, and all other useful bedding plants, so that I grow in each bed four crops a-year.

For large specimen flowers I take off the suckers as soon as these throw up in December, put them in 60-sized (3-inch) pots, in loam and sand, place them in a cold frame through the winter, repot in 5-inch pots in spring, and so go on repotting in good, turfy, strong loam and rotten dung till they are put into the blooming-pots, which are 9-inch pots, or nothing less than an 8-inch pot. The pots are plunged in the borders on the top of a 60-sized pot, to keep out the worms and give good drainage. The pots are plunged within 2 inches of the rim, and the plants watered with weak liquid manure three times a-week, from August to the time of the flowers showing colour. The foliage, too, is syringed every morning and evening. The side shoots are taken off, the plants trained to one stem, and in September they generally divide at the top into three or four shoots. If the flower buds are more than two on a shoot, thin out all but the best; say four good buds on a plant are quite sufficient to insure a good large bloom. Insects are very troublesome; they must be well looked after, especially caterpillars and earwigs.

The following is a list of the varieties I find best to insure a good show:—

LARGE FLOWERING.—*White*—Vesta, Mrs. George Rundle, The Globe, Beverly, White Queen of England, Formosa, and Florence Nightingale. *Yellow*—Jardin des Plantes, Gloria Mundi, Delight (or Yellow Formosa), Guernsey Nugget, Golden Hermine, Golden Queen of England, Little Harry, Golden Beverley, and Annie Salter. *Rose*—Lady Hardine, Ariadne, Alfred Salter, and King of Denmark. *Blue*—Hermine, Lady Slade, Venus, and Cassandra. *Red*—Pis Nono, Mount Etna, St. Patrick, and Nil Desperandum. *Orange and Red*—Rev. J. Dix, Dupont de l'Eure, John Salter, and Sparkler. *Chestnut*—Mr. Gladstone and Oliver Cromwell. *Crimson*—Crimson Velvet (late), Dr. Sharpe. *Purple*—Prince of Wales and Sir George Bowyer. *Ananarth*—Frogne and Lord Palmerston. *Rose and Crimson*—Prince Alfred.

Pompons.—*White*—Cedo Nulli, Argentine, Miss Talfourd, Martha, White Trevenna, and Marabout. *Yellow*—Aigle d'Or,

Général Canrobert, Golden Ananthe Barale, Berrol, Golden Cedo Nulli, Drin Drin, and La Vogue (golden). *Lilac*—Cedo Nulli. *Cream*—Andromeda. *Violet*—Hélène, Mr. Murray. *Rose*—Durule and Rose Trevenna. *Cherry*—Florence. *Crimson*—Bob. *Chestnut*—Sainte Thais. *Brown*—Mustapha. *Carmine*—Salomon and Dr. Bois Duval. *Bronze Red*—La Liliputienne.

The whole of the varieties named in this list bloom freely with me. The Anemone-flowered varieties do not bloom well here, but both the large and small varieties are very beautiful when grown under glass. I only write about those which do well exposed to smoke in the open borders.—SAMUEL BROOME, *Temple Gardens*.

INTERNATIONAL EXHIBITION OF PLANTS AT ST. PETERSBURG.

To reduce the railway fares for visitors to the International Exhibition of Plants at St. Petersburg, and also for the transport of plants and other objects in connection with gardening, the Association for Developing Gardening of Berlin has obtained from the Minister of Commerce, Industry, and Public Works, the following communication:—

"Berlin, 31st March, 1869.

"In reply to the report of 6th inst., I beg to communicate to the Association, that I have resolved to permit the following facilities of transport on the government railway lines, for the 'International Exhibition of Objects of Horticulture at St. Petersburg,' which will be held from the 17th to the 31st of May (5th to 19th of May, O.S.).

"a. All living plants, as well as all perishable objects, which carry the address, 'International Exhibition of Objects of Horticulture at St. Petersburg,' will be sent on the going journey by passenger trains (but not by mail or express trains), and only be charged after the ordinary goods tariff.

"b. All specified objects, as well as all machines, implements, &c., will be returned free of charge for carriage if such have not been sold at the Exhibition, and carry certificates of the Committee to be exhibitors' objects, and returned to the exhibitor.

"c. Persons who visit the Exhibition have to pay for the going journey the full fares, but the return journey to their country is free for the same class of carriage, if they prove by a certificate from the Exhibition Committee that they are visitors of the Exhibition.

"The Directors of the royal railways have received the order accordingly, and also the Royal Railway Commissioners have been ordered to try to obtain the same facilities from the private railway companies of their districts. These facilities extend only to three weeks after the closing of the Exhibition.—The Minister of Commerce, Industry, and Public Works.—By order, WEISHAUPF."

The following information relating to the final arrangements for transport of plants and other objects intended for the Exhibition at St. Petersburg, has been received from the Committee:—

"The Great Russian Railway Company will charge to exhibitors the following tariff:—For each werst and each pad, 1-30 kopeks from the Prussian frontiers to St. Petersburg is 840 werst, and 3 pad are exactly 1 cwt. English).

"The rule that objects of large dimensions shall pay double carriage, and that such as do not weigh 3 pad shall pay for 3 pad, does not apply to the Exhibition goods. A railway van loaded entirely by one exhibitor pays 15 kopeks per werst.—The President of the Commission, E. REOEL.—The Secretary of the Administrative Department, E. ENDLER."

"1 cwt. from the Prussian frontier to St. Petersburg will cost 2s. 6d."

Dr. Karl Koch, of Berlin, informs us that arrangements are being made at Berlin, for all the visitors from the west proceeding to the St. Petersburg Show to rendezvous at Berlin, and proceed in a body thence to the Exhibition; and that on their return they will remain two or three days at Berlin, where a committee has been formed to show them all objects of horticultural interest.

We are requested to inform intending exhibitors that all communications relating to the Exhibition should be sent to one or other of the three appointed representatives, on or before the 24th inst. The representatives are Dr. Hoge, office of THE JOURNAL OF HORTICULTURE, Fleet Street; Dr. MASTERS, office of the Gardeners' Chronicle, Wellington Street, Covent Garden; and Mr. H. J. VENTON, King's Road, Chelsea.

NOTES AND GLEANINGS.

"D., Deal," recommends any who are curious in such matters to see four extraordinary paintings by Morales, a Spanish painter, temp. 1640, of the four seasons, each face and figure composed of flowers, fruits, and vegetables, corre-

sponding to the season represented. They are at Messrs. Dick Radclyffe & Co.'s, seedsmen, High Holborn, and are well worthy a visit.

THE PORTABLE ORCHARD.

(Continued from page 226.)

TRAINING.

TRAINING comprehends the form in which the tree is artificially made to grow, and also the treatment of the branches of that form, so as to obtain the best results in fruit. I shall divide this portion of the subject into two—*Forming* and *Pruning*; by the former, meaning the methods of giving definite shape to the trees, such as pyramids, goblets, &c., and restricting the term pruning to the cutting-in the shoots to produce fruit buds. I am often asked by friends to "prune a tree" for them, the said tree being in some cases a thicket, and in others a stump, and I am expected to be able by the use of a knife to make the tree as perfect as one that has been trained regularly from the graft. Now, it most commonly is the case that a few years of neglect ruin a tree irretrievably, and no pruning can set it right; but it is universally the case that three or four years of careful work are required to remedy the mischief of a single year's neglect. In all training, the tree, for at least three years of its growth, must be in the mind's eye of the gardener. This effort of imagination is the grand difficulty in the art; it is certainly no very great mental exertion, but still it is sufficient to divide the world into two classes—those who can train, and those who cannot. At present the two classes are very unequal in number, because, perhaps, the great mass of mankind never think about the matter. Of this we have no right to complain, but I am sorry to say professed gardeners are too often quite in the dark about fruit trees, and it is no easy matter to get the labour of training taken off one's hands. I am obliged to depend upon my own knife here, as I could not hire a gardener in the district capable of keeping in order even the trees already formed. Much has been written on the subject, but not enough to make it useless to add more. I shall throughout adhere to the short-spur system, or cordon style, as it is more commonly called now.

FORMING.—We have for our portable orchard no very large range of forms, and therefore the subject is to a considerable extent simplified to our hands; it will be found, however, that the mastery of any one form gives the power of dealing with any other, so that a man who can train a pyramid tree can very soon learn to apply his knowledge to wall trees.

The principles upon which trees are formed are few and simple. The first is the fact that all trees try to grow upright, and so those shoots that are allowed to grow upright become the strongest. The second is that you can starve a branch by depriving it of its natural nourishment, either by removing leaves during the growing season, or by cutting away a portion of the bark and alburnum at its lower extremity early in spring. A third and very useful principle for moveable trees is the fact that they tend to grow strongest towards the light.

All forms that are good enable the sap to flow regularly and evenly to all parts of the tree, and at the same time admit light and air freely to every leaf. A tree left to itself grows vigorously for many years without bearing any fruit, and becomes a dense mass of branches. When the roots have exhausted a large portion of the soil the tree begins to grow less vigorously and form fruit buds. For a few years such a tree will bear well and have good fruit, but only for a few years. Nature is trying to produce as many seeds as possible, and cares nothing about the quality of the pulp in which they are enclosed. We, on the contrary, care only for the pulp. Now, the seeds exhaust the tree more than the pulp, consequently a large quantity of fruit can only be carried by a tree at the cost of the pulp, and in far more than what would be considered a fair proportion; in fact, if you take off half the crop from a heavily-loaded tree the weight of the remaining fruit, when it has come to maturity, will be greater than if all had been left on. Again, the quality of the fruit depends upon its being fully exposed to the action of the sun, and in a large natural tree only the fruit on the outside can be so exposed; all the interior of the tree for fruit purposes is useless, though by no means so for the production of seeds. Nature seems to have provided against bad seasons. The heavy top spray of a natural tree forms a capital protection for the interior against frost and wind, so that when the outer branches fail the fruit in the interior are all the better for the thinning of their brethren; whilst in those seasons when the outer branches are loaded, the fruit on the inner branches are far below the average, and generally drop in large numbers. When, therefore,

we deprive a tree of its freedom, we must take care to provide for it what its own instinct (?) would find; at the same time the domesticated tree is no longer to be allowed to cover the district with Crabs.

I will give as my first example of form a very simple one of a fan or palmette (*fig. 17*). Such a form is more suited for walls than for our orchard; however, for the outside trees it comes in well as an espalier. It has the great advantage of insuring the proper growth of those branches which are the most difficult to obtain, and as the knife need never be used at all, there is no waste of wood, for I may here, once for all, tell you that all severe cutting is a mistake. The tree has a large portion of its flesh and bones taken away, and what wonder if it becomes diseased in consequence? At any rate, to what purpose is it to make quantities of wood to be annually destroyed? Surely such a pruner must be a worse foe than all the aphides and grubs that timber is heir to.



Fig. 17. Palmette bent the first year after grafting.

Early in spring select a clean-grown, vigorous, straight stem, resulting either from a bud or the A shoot of a graft. Look for a good eye, *a* (*fig. 17*), on the point of breaking, and bend the shoot down immediately above this eye by tying the upright portion of the stem to a stake secured to the stock, and the bent part to another stake crossing the first at the bend, and sloping at an angle about 40° from the horizontal (*1*). Our object is to make what was the natural leader of the tree the lowest branch of the fan, and to develop a new leader from the bud *a*, which new leader will in its turn be converted into branch No. 2. We have a few points to think about in doing this, connected with principles. The height of the eye, *a*, must be such as to be above the snow line, and, therefore, must depend upon locality; the lower, however, the better. Then the bud *a* should be on the south-west side for its own growth to be most vigorous, and the lower side of the branch, *1*, should be that on which are the strongest eyes, and therefore, on its original south side. These, excepting in potted trees, are incompatible conditions. If the tree is a fixture it is of more consequence to have the lower buds of *1* well ripened than the bud *a*, because a piece of the bark just above it may be removed in order to stop a portion of the sap in its ascent; this will at the same time check all the buds on the upper side of *1*, but after all not to the same extent, as the compression of the bend obstructs it on the lower side, and, besides, the upper buds have more light and their own innate tendency to grow upwards. That is the reason for not bending the branch *1* down to its final position at once.

If the selection has been well made, the bud *a* will push vigorously, and it must be allowed to grow upright till the following spring. The bud at the end of *1* must be encouraged to grow as much as possible, allowing the end of the branch to curve upwards for this purpose; but all the others must be stopped at three leaves—that is, as soon as three full-sized leaves are formed by any lateral shoot, all the rest, and the point of the shoot with them, must be nipped off a quarter of an inch above the third leaf. When the branch is fit for this operation the shoots are so tender that the finger or thumb nail is quite strong enough to pinch the portion off. As this part of the business more properly belongs to pruning, I will say no more about it at present. If the pinched shoots make fresh ones, these must be again stopped at the second leaf; after

that nothing more is needed till the end of August, when all these stopped shoots must be pruned off at two eyes—that is, the shoots must be cut off below the leaf to which they were first pinched. The new leader should now have its point pinched off, unless it be a potted tree, when all fear of unripe growth is removed by the lifting of the pot at the piling season.

In the following spring the young tree requires its new leader to be bent just as the original one was, only to the opposite side, and at the first eye, *b* (*fig. 18*), above the bend, making the angle

as before 40° , or so, with the horizon, thus forming branch 2. The original leader may now be depressed a little more; but it is always well to allow these first two branches to establish themselves thoroughly before the upper part of the tree is formed, and, therefore do not bend them down too much at first. The other branches, as they are produced, may be bent down more and more at once, as they are higher up the tree, but the points of all of them should be allowed to grow freely by curving them upwards.



Fig. 18.—Palmetto after two years.

The shoot from bud *b* is now made the vertical leader, and in turn will be bent to form branch 3 (*fig. 19*). The treatment for forming is just an annual repetition of the process. In this way a most regular palmetto with horizontal branches can be formed at the rate of one branch a-year, the stem, instead of going straight upright, being waved. The usual way of forming such

trees is to cut down the leader to three eyes, two right and left to form branches, and the uppermost to form a new leader. In this way two branches are formed in one year; but I find the surface covered by the bending-down plan is greater than that got by successive mutilations, for the branches are far better developed when each has been grown upright in its youth;

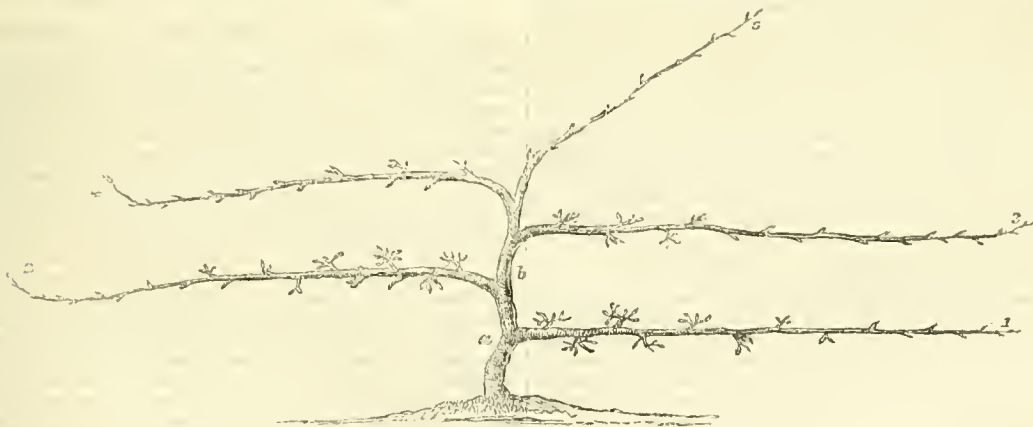


Fig. 19.—Rectangular Palmetto after five years' training.

besides, the waved form of the stem enables the sap to flow more freely to the lowest branches, exercising a wholesome restraint on its upward tendency.

A modification of this form is to bend the second leader, 2 (*fig. 18*), close to *a* instead of above *b*, and to bend 1 at a bud *c*, about a foot from *a*, this bud not having been stopped if it pushed during the summer; the portion of 1 between *a* and *c* being left at its old inclination, and the rest of it bent lower, so as to obtain a fork at *c* during the ensuing summer. The next year 2 is treated similarly, and thus the foundation is laid for a diverging fan, the only objection to the plan being the unsight-

liness of the want of symmetry for the first three or four years. I may add that the plan is a most useful one for correcting the bad training of wall trees. I saw a very fine wall a few weeks ago covered with nearly useless trees, and found that by judiciously thinning-out the old branches and bending the rest I could cover the wall again in a couple of years with regular forms, in such style as to secure plenty of fruit. I have been, perhaps, tedious in describing this form, but as it involves nearly every principle, it is well to understand it, and then all the rest will be easy work.

—W. KINGSLEY.

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE the trenching of ground as it becomes vacant, and bury in the trenches all refuse vegetable matter—a practice which cannot be too much insisted upon; it is better to do so

at once than to lay it in heaps in the rubbish ground, where it loses its fertilising properties. *Broccoli*, sow *Walcheren* now, and the operation should be repeated at the end of June and the end of July. The heads of this kind are large, firm, and

white, like those of very fine Cauliflowers, which, in fact, they closely resemble in appearance, except that the leaves are not so plane as those of the Cauliflower. In constitution, however, the Broccoli is different. It will stand the winter cold and the summer heat much better, and for the winter the seed may be sown in August in sheltered situations, or under hand-glasses, allowing plenty of air. *Celery*, continue to prick-out; this must always be kept well supplied with water. *Cauliflowers*, draw up the soil to the most forward, and give plentiful applications of liquid manure. Prick-out the seedling plants of the earliest-sown *Brussels Sprouts* and *Savoy*s, to have them stocky for final planting. The young plants of *Asparagus* will now be ready for planting in beds, which it is hoped have been properly prepared; let the roots be carefully lifted with a strong fork, and after planting give a good supply of water to settle the soil about them. Sow now a full crop of *Dwarf Kidney Beans* and *Scarlet Runners*; sow also a full crop of *Red Beet*, if not already done. Repeat the sowings of *Lettuces* of all sorts, and thin-out and transplant those advancing as occasion may require. Sow a good breadth of *Turnips*, the ground for which should be well dressed with wood ashes, or charred refuse. When *Potatoes* are above ground, draw a little dry soil over them for fear of injury from frost.

FRUIT GARDEN.

See that plantations of *Strawberries* are free from weeds. Those plants that have been forced may now be planted in ground thoroughly prepared by trenching and manuring, putting them in rows 2 feet apart, and 1 foot apart in the rows, and watering occasionally should the weather prove dry. See that the soil is kept well pulverised about the roots of trees, and that all newly-planted trees are sufficiently mulched. Keep a good look-out for the numerous tribes of insects, and apply remedies in time. Continue, moderately, the disbudding of *Peaches*, *Nectarines*, and *Apriots*. When *Vines* have shot sufficiently to distinguish the fruit-bearing shoots let all superfluous ones be immediately removed. Examine frequently grafts, removing on every occasion the wild shoots. Search for and destroy caterpillars, which frequently cause serious injury to the young shoots. An application of tobacco water to *Peach* trees infested with the fly, will be found useful in repressing them. Avoid trampling about the roots of wall trees, particularly those newly planted.

FLOWER GARDEN.

The flower beds should be well dug and fully prepared for the reception of the summer plants some time previous to planting. Disbud *Roses*. Proceed with weeding when the walks are damp. Should dry weather ensue water should be liberally supplied to evergreens lately removed. Select tall plants of *Fuchsias* for bedding. Prick-out and encourage the growth of seedlings of *Campanula carpatica*, *Petunias*, *Lobelia ramosa*, and similar plants. Propagate *Tagetes lucida*; its bright yellow blossoms assist to give brilliancy to the parterre. At this season those who cultivate annual flowering plants must be on the alert to afford a timely thinning, for if the plants be left in the crowded state in which they spring up, they will prevent each other from attaining anything like an average degree of perfection. Pot-off seedling *Dahlia*s as they acquire strength into thumb pots, and retain them in the same temperature as that in which they were raised. Harden-off cuttings which have been potted preparatory to planting-out. Seedling *Auriculas* must be carefully kept from the sun, the direct rays will speedily destroy them. Seed may be sown. The main stock will now be coming into full bloom. In order to prolong the season of these beautiful flowers, it will be necessary to remove them to a stage having a northern aspect, over which a light awning of calico must be spread. At the end of the week seeds of *Carnations* and *Picotees* should be sown in vegetable mould, mixed with sandy loam. It is a bad plan to sow sooner, as the plants are apt to become gross in habit, and, consequently, unable to effectually withstand the effects of frost. Examine daily the traps for wireworms (slices of *Potatoes*) placed in pots or beds where there is a suspicion of these pests lurking. Top-dress *Pinks*, and strike cuttings of *Pansies*.

GREENHOUSE AND CONSERVATORY.

Greenhouse *Rhododendrons* flourish in light, fibrous heath soil, and should be allowed plenty of it, for they are not benefited by frequent shifting; repotting should be performed immediately after blooming—that is to say, as soon as the flowers begin to fade. While growing the plants should be kept in a temperature of 55° or 60°, and receive a liberal supply of water; fresh growth usually occurs about this time or the be-

ginning of May, sometimes a week or two later, according to the period of flowering, and the formation of the new wood generally occupies three or four weeks. After this follows the most particular point of their management. If the watering and warm temperature be continued beyond the period necessary for the due completion of this first growth, another production of new wood immediately follows, which is the sole cause of the non-production of flowers. Water and liquid manure should now be applied most abundantly to strong-growing climbers and other plants that are turned out in the conservatory permanently, or growing in large tubs or pots. In the case of those plants that are introduced from the stove, forcing pit, &c., merely for the blooming season, of course great care must be taken in the application of water, otherwise disease will be the result, and a host of troublesome insects will be the continual after-pest. Continue to stop, prune, or pinch-back all unruly-growing shoots in due time, and see that the plants done flowering from other structures are put to rest, returned to their natural positions, pruned back, repotted, and their growth again encouraged in due season.

STOVE.

Continue to give liberal shifts to the free-growing young stock, selecting healthy fibrous soils, with sharp gritty sand, applying when necessary stimulating food in the shape of clear tepid manure water, frequently syringing, giving slight shade in hot weather for a few hours, taking it off early, shutting up early in the afternoon, and raising at all seasonable times a kindly humidity by damping the floors, walls, and pots. Apply clear soot water occasionally with the syringe to such plants as are subject to the attacks of scale or coccus.

PITS AND FRAMES.

Continue to pot-off rooted cuttings as soon as they are in a fit state for the purpose. As little danger is now to be apprehended from frost it will be well to remove all litter, fern, &c., to its proper place. Make room in a cold pit for late-flowering *Calceolarias* and *Pelargoniums*, and continue to repot in succession these useful flowering plants.—W. KEANE.

DOINGS OF THE LAST WEEK.

Asparagus.—We lately mentioned slightly hoeing and salting the beds, and though looked for, not a shoot was seen, so as to be injured; yet so warm were some days, the thermometer mounting up to summer heat, that we gathered a good dish on the 15th, where a few days before not a shoot was visible. Now, too, the *Sea-kale* from under pots out of doors, without any artificial heat, is excellent, most shoots being about as thick as an ordinary man's wrist, and such shoots properly cooked when not more than 6 inches long, give one an idea of what *Sea-kale* is, or ought to be. With all our care in cutting it when short, this vegetable is apt to be a little watery in winter.

Slates for Blanching Endive.—We notice this as a precaution. The plan answers well in cold or dull weather, but not in a bright sun. Wishing to have in quickly some fine heads that were in the open air, slates were laid over them, but the bright days in the beginning of the week destroyed the heads, burning them up completely. We forgot for the moment how hot a dark slate may be made by the strength of the sun's rays. If the slates had been whitened outside, or even a little litter placed over them, the blanching would have been effected, and no injury would have been done to the *Endive*. Fortunately we had some fine heads, each merely covered with a flower pot pressed firmly into the ground, and a piece of turf laid over the hole in the reversed pot. We never think so much of *Endive* as of *Lettuces*, but the milk-white *Endive* made the greener *Lettuce* look all the better.

The wet of the 16th, and the ceaseless rain on the 17th, prevented our sowing, and proceeding with other operations, and the work, therefore, has been merely attending to the doings of previous weeks. The warm weather is bringing on the *Broccoli* rather too fast for us, but it will also help us with the *Cauliflower*. We grow the bulk of our *Rhubarb* on a north border, and though the soil is a stiff loam, we have remarked for years that we are rather earlier than in gardens with lighter soil, and in warmer and more sheltered places. Ours has grown very fast during the week, but we expect the north wind accompanying the heavy rain of the 17th will keep things a little back. Onions, *Lettuces*, and other seeds, are coming up well, and *Potatoes* are showing at the feet of walls, so as to succeed those that received protection. *Asheaf Kidneys*, &c.,

in frames, have been very good, and as yet have shown no sign of disease. Cabbages are hearting well, and have been greatly improved by the rains. Cucumbers in frames were banked up with a little litter to keep off the north wind, and as most of the bed is above ground, we ran laurel branches through some old hurdles, and set them lengthwise along the back of the bed and frame. It is astonishing how even such a protection tends to keep the heat equal and regular, by insuring a gradual decomposition of the fermenting material. We have noticed this year what we have remarked in former years, that of the same kind of Cucumber, and sown from the same packet, and in the first gatherings especially, fruit obtained from a dung hotbed are smoother-skinned than those produced in a pit heated by hot water, so much so, that they would be taken for different varieties. Sowed a small piece of early Dutch Turnip and Snowball. It is best to sow often, and but little at a time at present, as the plants soon run to seed, and are then of no use. Pricked-out Cauliflower. Planted Sweet Herbs, Chives, Shallots, Garlic, &c.

FRUIT GARDEN.

The week of hot weather opened Cherry blossoms as if by magic, so that we were too late to give some of the trees the dressing with lime, &c., that we intended for them. Many of our rows of Strawberries were shrivelled-up last season by the drought, and though they became greener in the autumn, we find that they will not knot for bloom quite so fully as they used to do. The scarcity and the lateness of runners also rather told against our forcing plants, the flower trusses of the earliest coming smaller than usual. Later ones, having more time, promise to be stronger and better. We hope some time to have a small house for Strawberries. We prefer a house to a pit because more light is thus obtained, and the plants can be attended to in all weathers. Most of us have to make shift in every open space in a house where there is heat for Strawberries, and they do not thus obtain full justice, and when forced to move them we are almost sure less or more to check or injure. Our finest forced Strawberries were always obtained when from the time the plants showed bloom they stood in the same place until the fruit was gathered. Most of us have to move the plants at times, as, for a particular purpose, we moved a lot last week from an average night temperature of 55° to one of 60° and 65°, in order to ripen the fruit sooner. One essential to flavour is if you cannot give the fruit some hours' sunshine before gathering, the pots should be allowed to become as dry as the plants will bear without materially suffering. Other matters, as thinning shoots of Peach trees, were much the same as in the previous week. In the hot days syringed floors and pathways several times a-day, merely sprinkling them. Tried to keep the latest vinery back with all possible air to be safe; but the Vines would break and grow in spite of us. We have, therefore, shut the house up in the afternoon, but will give little or no artificial heat, unless in a very cold night, for some time.

ORNAMENTAL DEPARTMENT.

Much time has been taken up with rolling and mowing lawns. It is best when the rolling is done two or three days before mowing, so that the grass can be quite upright again. Ground fresh-turfed in autumn and winter, when rolled after the rains, looked like an old lawn of a dozen years' duration. Turfing, like planting, should be done early if the most economical success is desired. In the great space of turfing done we do not anticipate that even a hot summer will make any cracks; but if a few appear we shall fill them with fine soil—a better method than attempting to water them. In all evergreen shrubs and trees planted early in winter we see no signs of going back, and this rain will greatly help them; but evergreens planted in spring winced under the hot sunny days, and will lose at least a number of their leaves. Some specimen plants removed only lately, we shall keep slightly protected from sun and wind by means of a few laurel boughs tied together at the points, and at a distance from them. The withered laurel leaves are anything but an ornament, but then they serve the purpose, and will be removed when the fresh growth is proceeding freely. We would rather have the ugly look for six weeks than a dead or dying plant at midsummer.

Roses.—Pruned all fresh-planted Roses, except those not yet growing much. In pruning now we cut back rather closely, depending on the buds showing, as these will come strong enough when the top of the shoot is removed. We were afraid to cut back during the cold parching winds, as then the young growth that would have come from the base of the shoots might have been injured. We could be more independent in this

matter as respects early Roses, as to succeed those forced we have a lot against a wall that were pruned in early and protected afterwards with laurel boughs. We shall not quite remove these until we see what the weather may be. From the wall we thus obtain Roses very early. We should like much to have a glass house in the orchard-house style for Roses alone. Even without artificial heat Roses could be gathered from such a house all the year, with the exception of a few of the darkest and coldest months.

Florists' Flowers.—Hyacinths and Tulips done flowering in pots, should, if possible, be kept under glass until the foliage, after growing vigorously, begins to decay, and then the bulbs will be useful. The best Hyacinth and Tulip beds out of doors should now be protected from high winds and drenching rains, as Tulips, especially, are easily injured. Where Anemones and Ranunculuses require it, the ground should be firmed against the plants, and then left rough on the surface. Auriculas, whether under a glass house, frame, or hand-light, should be carefully watered, and the swelling pips kept separate with little pellets of dry moss, or dark-coloured cotton wadding. Carnations, Picotees, &c., to bloom in pots, should now be placed in them, using fresh sandy loam, enriched with rotten cow dung, or hotbed manure, and after they begin to grow freely in the fresh soil they should be top-dressed with similar rotten manure. The soil should be carefully examined for wireworm and other enemies. A good plan in particular cases is to heat the soil in an oven, or by the side of a fireplace, so as to cause all intruders to scamper, and then expose it to sun and air for a fortnight, watering it previously if too dry. Under such treatment the soil will be well aired and free from intruders. We have grown such plants in pots with great success, but except to please a florist's refined eye, we always thought the whole of the pot system had about it "much cry and little wool;" and when we commence growing Carnations and Picotees largely again, we shall try to have fine plants in the open ground, from which we can cut handfuls if not armfuls of blooms. To meet changes of taste, and we may as well confess it, being beaten by rabbits and hares, we have done little lately with these lovely flowers, but we have had even large beds of the Perpetual section which no group of bedding plants could excel for brilliancy. For a few fine florists' flowers, grow the plants in pots. For basketsful of flowers grow them in rich, well-pulverised soil in the open garden.

Hardy Annuals.—All of these may be safely sown from the middle of this month, and with, in many cases, better prospects of success than if sown early, as the plants grow without a check, and therefore, if sown thinly, or thinned early, will grow vigorously. We have sown at the end of February, in the middle and end of March, and the first fortnight of April, and almost invariably in stiffish soil the last sowing did best and bloomed earliest. When hardy annuals are wanted early they should be sown in September, and a few twigs stuck among them will often enable them to pass through even hard winters; in fact, a frosty and snowy winter is often less injurious to them than a close, mild, damp winter, like that through which we have passed. When their seeds are to be sown in borders without any definite plan, the old plan of drawing a circle with a pointed stick and sowing in the circle is as good as any. When a well-formed bed of a single annual is desired, it is a good plan to sow in lines, and but for the greater trouble when a very regular bed is desirable it is worth while to sow in small round patches, and cover each with a 5 or 6-inch pot until the seeds appear, and then edge the pot up on one side for a few days, and replace it in cold nights. Two points more may be kept in mind—first, beware of burying the seeds. Dust-like seeds should merely have a dust-like covering. Avoid sowing when the soil is cloggy and wet, or if from combined wet weather you cannot have the soil dry enough, keep a little fine, dry, sandy loam in reserve, which you can sprinkle over your seeds. When you sow without this precaution in wet soil, the seeds are apt to be hermetically sealed up from the air, and germination is impossible. If sown when the soil is somewhat dry no rains will have that effect, as they merely moisten the seed in passing it, and take air along with them. Lists of the best hardy annuals have been frequently given by ourselves and others.

Half-hardy Annuals.—By the time this is in print we shall be sowing or preparing to sow ours, either in pots or on a slight hotbed, as Stocks, Asters, Zinnias, Marigolds, Chrysanthemums, &c., and some hardy annuals we may wish to use as groundwork or as edgings. We know that in most calendars, this work is recommended to be done at least six

weeks, or more, before we generally do it. To carry out the half of these directions would require plenty of room to prick-off under protection, and then, after all, the growers would be disappointed. We have seen such plants from seed sown in the beginning of March that, after passing through trials and troubles, were not so good as plants sown without protection in May. Provided you can give the room, and wish to turn out large plants at once, sow early; but if you cannot do so, sow later. Nothing suffers more than these plants reared tenderly when moved about until vitality is almost driven out of them. If you sow now, treat kindly but judiciously, but if from the time the plants appear until they go finally into the ground you give them scarcely a check, you will have reason to believe that rather late sowing is not always synonymous with late returns.—R. F.

COVENT GARDEN MARKET.—APRIL 21.

THERE is rather more animation in the trade here, stocks clearing off well, but only at trifling advances. Imports now consist of Asparagus, Kidney Beans, Artichokes, Turnips, Carrots, Endive, Green Peas, and Lettuce; the Channel Islands furnishing some excellent Broccoli. Forced fruit is quite sufficient to meet the present demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples $\frac{1}{2}$ sieve	3	0	4	0	Melons.....each	2	0	5	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges 100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches doz.	0	0	0	0
Currants..... $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black doz.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs doz.	0	0	0	0	Plums $\frac{1}{2}$ sieve	0	0	0	0
Filberts lb.	0	0	0	0	Quinces doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Strawberries.....oz.	0	9	1	0
Grapes,Hothouse..lb.	10	0	20	0	Walnuts.....bush.	10	0	16	0
Lemons 100	4	0	8	0	do. 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	6	0	Leeks bunch	0	4	0	6
Asparagus 100	5	0	8	0	Lettuce score	1	0	3	0
Beans, Kidney .. hd.	1	0	2	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,punnet	0	2	0	3
Broccoli bundle	1	0	2	0	Onions.....bushel	8	0	12	0
Brus. Sprouts $\frac{1}{2}$ sieve	0	0	0	0	Parsley sieve	3	0	4	6
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0
Capicorns 100	0	0	0	0	Peas quart	8	0	0	0
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney doz.	4	0	7	0
Celery.....bundle	1	6	2	0	Radishes doz.bunches	1	6	0	0
Onion.....each	0	6	1	0	Rhubarb.....bundle	0	6	1	0
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	3	0	0	Tomatoes doz.	1	0	2	0
Horseradish .. bundle	3	0	5	0	Turnips bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

Ambroise Verschaffelt, Rue du Chaume, 52, Ghent, Belgium
—*Prir-courant pour le Printemps et Eté, 1869.*
G. White, 3, Moss Street, Paisley.—*General Catalogue.*

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Monticola*).—The work you name is not completed. Bentham's Handbook of the British Flora, Illustrated Edition, will suit you.

FLOWER BED PLANTING (*B. B.*).—We never undertake to detail the arrangement of a flower bed, we only criticise that which is proposed.

MISTLETOE ON PEACH AND ASH TREES (*D. B.*).—It is very unusual for the Mistletoe to be found on the Peach—in fact, the instance now in your garden is the first brought to our notice. You say the branch it is on is now dying. Is it dying throughout its entire length? The Mistletoe on the Ash tree near you is also very unusual.

CONSERVATORY TRELLIS (*S. G.*).—Have it of galvanised iron, not of

zinc, it is stronger. Any of the wire-manufacturers advertising in this Journal could supply you.

LAZY-BEDS (*R. G.*).—Lazy-beds are beds dug for the growth of Potatoes, the sets being then placed in rows on the surface, and covered by the soil dug out of narrow, deep alleys between the beds.

HOLLY-HEDGE PLANTING (*W. G. W.*).—Now is as good a time as any for planting Hollies, and for the next month; and they move equally safely at the end of August in moist weather, and onwards in moist weather to the end of October.

CHERRY PLUM FOR A HEDGE (*Idem*).—We have no experience of this as a fence, and do not think it would make a good one, though it might be suitable as a screen. The proper time for planting it is in autumn, when the leaves are falling or have fallen, or early in November, and onwards up to March in mild weather.

RHUBARB SEEDING (*A Subscriber*).—The only means of keeping Rhubarb from seedling is to take up the roots every three or four years, dividing the plants into as many divisions as there are crowns to each, and replanting the divisions. They may also be kept from seedling by cutting off the flower stem as soon as it shows itself, and close to the lowest leaf or leaves. It should be done before the flower stems are more than 2 feet high.

CAMELLIA STOCKS (*Idem*).—The usual stock in grafting Camellias is the Single Red Camellia, though other sorts are sometimes used. They are raised from cuttings of the ripened wood at the end of August, and by seeds, which should be sown in spring.

CUTTING DOWN FERNS (*Idem*).—The fronds should be removed as they become brown, and by degrees as the new growths are formed. If, however, they have all died or browned fronds, then they may be cut off now if under glass, or, if out of doors, now is as good a time as any. Cutting-down is best deferred until spring, as the dead fronds protect the plants or crowns from frost during winter.

FERTILISING CUCUMBER BLOSSOMS (*Idem*).—The operation you have seen performed is fertilising the female flower, or that having the fruit at its base. What you have seen put in the flower is the male flower deprived of its corolla, and the yellow dust or pollen on the centre portion of the male flower is that necessary to be placed on the stigma of the female flower. It is done to secure the setting of the fruit, and especially to secure seed of any particular kind. The fruit will set without the blossom being fertilised, and for table it is best without seed.

COARSE GRASS ON LAWN (*T. F.*).—The only remedy that we know short of returfing would be giving the lawn a good top-dressing of short manure now or in autumn, and this would encourage the weaker Grasses, and the coarse ones would grow so luxuriantly that from close mowing their crowns would be cut off, and whilst they become weaker the smaller sorts will become thicker. A good dressing of bone dust will answer the same purpose, and it may be given now; indeed, anything that encourages the growth of the grass will tend to make the lawn less coarse, and to overcome the coarse grass sow Suckling Clover liberally now, 8 or 12 lbs. to the acre, rolling well afterwards.

PLANTS FOR NORTH WALL (*J. F.*).—There are few plants that will succeed on a north aspect, but Ivy does so admirably, and few Ivies are finer for the purpose than Koegeiiana, Tree, and the Irish. *Cotoneaster pyracantha* will also succeed, and so will *Cotoneaster microphylla*, but the Ivy is best. *Jasminum nudiflorum* is fine for a north aspect, flowering in the middle of winter (January), but it is deciduous. It is one of the most free-growing of plants, and very desirable on account of its free winter flowering.

HEATING A THIRD HOUSE FROM ONE BOILER (*Joseph C. Carnaby*).—If you have, as you say, plenty of power in the boiler, 60 yards of 2-inch piping will do between the boiler and the new house; but the pipes should be laid in a wooden box packed with sawdust. For another fireplace a small boiler would be cheaper.

SETTING GRAPES (*E. S.*).—The parties you refer to have their own opinion; but in sunny weather especially we damp the floors and stages of the viney whilst the Vines are in bloom.

VINE ROOTS DEAD (*James Crump*).—Neither rank bones nor garbages of any kind is good for Vine borders; but as your Vines grew pretty well for two years, we cannot see how the bones equally mixed in the border should kill them now. It seems more likely that something wrong has been given them at the roots.

GRAPE BUNCHES BECOMING TENDRILS (*Inclus*).—The chief causes of the Vine bunches running away into a sort of tendril and not opening the blooms, are unripened wood and luxuriant growth from rich soil and deep roots. The simplest remedy is to keep the wood more free of laterals, to give more dry heat in the autumn to harden the wood, and to keep the roots drier.

TRAINING VINES (*An Old Subscriber*).—You are quite right in having your Vines from 14 to 18 inches from the glass. That secured, it matters little how you train them. We would rub off one of the shoots now showing, except the weakest, and so as to retain one or two shoots showing fruit to each spur. As the main shoots reach the top of the house you must treat the terminal one the same as the rest, and stop at a joint or two beyond the fruit. Besides the unsightliness, a spur 6 inches long will be as fruitful as one 2 inches or less in length. As you have two such spurred shoots for each Vine, you could provide for one or two new shoots this summer by selecting one shoot near the base of each shoot, or of one of them—we would say both—and allow that to grow rather more than half the length of the house without stopping. After stopping and before allow laterals on the young shoot until towards autumn, and allow laterals on few of the bearing spurred shoots. Next spring cut the young shoots to about one-third of the length of the rafter, and for that space remove all the spurs from the old wood. Do the same the next year, and thus in the third season you would have a fresh leader, or rather two to each Vine, with spurs close home, and then you could cut away the old stems and replace with younger ones. Springing helps the Vine at first, but in unheated houses it may be dispensed with if the floors are kept damp in hot weather.

FAILURE OF TREES IN ORCHARD HOUSE (*W. B.*).—We should think the failure of your trees by not setting was owing to repotting rather late in autumn, and the wood being imperfectly ripened. The repotting should be done as soon as the fruit is gathered. We have had fruit trees in

small pots for six or seven years without being ever repotted, merely because we could not find time, and therefore preferred top-dressing. Last season with us was a trying year. We were obliged either to let many trees parch up with dryness, or give them manure water too strong. Owing to the latter cause more blooms have dropped than usual, because growth was kept up too long, and the wood was not so hard as it ought to have been after such a summer. We also neglected to fertilise artificially, as we thought the sun would do that for us. Some of our trees will be a little thin of fruit in consequence.

FRUIT TREES DYING (*A Constant Subscriber*).—There is no doubt the attack of red spider, so thorough in the autumn, greatly injured the young wood. The dressing them might also help to injure the buds. Many shoots on our trees out of doors look something similar, but that we attribute to want of nourishment last summer. The attack of red spider in August, causing the leaves to fall then, in your case prevented the wood being matured.

ANOLE OF GREENHOUSE ROOF (*E. T.*).—The flower enclosed is that of *Arabis albidia variegata*. For a house 13 feet wide, and for the purpose indicated, the back wall should be at least 12 feet in height, and the front 6 feet, 4 feet of which should be glass.

BOILER AND RAFTERS OF VINERY (*B. B.*).—If you can sink your stove-hole, so as to have the furnace bars 2 feet below the ground level, and then raise the roof of the vinery 2 feet above the ground level, you will have no difficulty if you use a saddle-back or retort boiler. You will have just as little difficulty with a flue if the flue be placed on the raised floor of the vinery. As water, however, may be troublesome in your case, we would have a small stove-hole, but we would have the bottom and sides laid with bricks in cement, and what will keep water in will also keep it out. We recollect seeing the water up to the fire bars in a surface stove-hole at Mr. Cutbush's, at Barnet, and yet some few hundred yards distant you would have to go down 500 feet for water. You may plant your Vines at once. If well established they will do very well planted in the middle of May; but if you cannot plant sooner, instead of turning out of pots then, if a quick growth were desirable, we would shake the plants out now and replant, with the roots spread out in little baskets or boxes, removing the sides in the latter case at planting time, and turning out baskets, &c., in the border just as they were. Those who supply you with the rafter sash bars would, if they have machinery, charge little for rebating, but, failing that, long slips, half an inch square, tacked or screwed on, make capital rebates for the glass.

HEATING A VINERY AND CONSERVATORY (*R. L.*).—If flues answer so well in your neighbourhood, we do not see why you may not thus heat your three houses. In the two end houses, 25 feet by 15 feet each, the flue in each could enter beneath the floor at back, go along the end next the conservatory, the front, round the other end, and thence into a chimney, without interfering with the pathway. In the span-roofed conservatory the flue could pass under the floor, go along the end, front, and other end, and dip under the floor again. With one chimney at the back of the conservatory, and three furnaces there, you could do; but in the two end houses you would require to bring the flue along the back as well as in front. In heating by hot water there need be no difficulty with the lime incrustation, if a little carbonate of ammonia be placed at times in the water. Nothing could be more simple than having a small boiler for each house; but as every boiler is so far a waste of fuel, were we doing the work we would have only one boiler, and all things considered, as there are three houses, an outlying conservatory in the centre, and a fruit house at each end, we would decide as to which of these end houses we would wish to force earliest, and at that end, either at the west end of the potting-shed, or the east end of the tool-shed, we would fix a saddle-back boiler low enough for a flow and return pipe to pass all the way under the pathway to the other end, preferring the pathway to be irrigated over the two pipes. This will enable you to heat one or more of your houses fully as you like, as from these main flow and return pipes you can take pipes into each separate department, to be regulated by valves or stop-cocks. You would thus, as a means of heating, have to spend from £5 on a boiler, and have about 140 feet of piping, such as the mains, for heating. You might thus have a little heat where you did not want it, but that could be neutralised by air-giving. Besides that, in the first vinery, taken from these mains and above ground, you would require three pipes round the ends and front for early forcing. In the farther or later house two pipes would do, and in the conservatory two pipes. In these houses the pipes could be placed at the sides, so as not to come in the way of the pathways, however arranged. With piping at from 10d. to 1s. per foot, you can calculate on the expense.

LEAN-TO ORCHARD HOUSE (*C. M.*).—We have looked over the plan of the proposed lean-to orchard house, and these are our suggestions and answers:—The ventilators that occupy the half of the apex of the roof will require to be from 21 to 24 inches in depth. If, however, you must have more of them, the front ventilator, instead of going one-half, should go all the way, if not more than 10 or 12 inches wide. Much air is needed in these large-squared roofed houses. Fourteen feet is a good length for a rafter, as you thus use battens of that length without waste; but if you use 20-inch-wide glass, we have no faith in having two rafters 4½ by 1½, and two between of 2 inches by 1½. Were we putting up such a house to-morrow, we would have the two end rafters and the centre one in the house, 4½ inches deep by 3 inches in width, which would thus bind the house, and all the intermediate rafters we would have 4½ by 1½ inches. Even then an iron bar along the centre of the house longitudinally, where you show the red line, would be needed, and at least two pillars in the house to keep it up. The proposed height in front will do very well. Rebates for putting may be easily made as you propose, by tacking slips of wood to the centre of the rafters half an inch wide, and half an inch deep, which leaves plenty of room for glass and putty. If you make your rafters weaker, you must use narrower glass. Twenty inches by twelve will be a good size.

MOVING IRISH YAWS (*A. B.*).—Now is as good a time as any, taking care to have a good ball of earth round the roots.

FERTILISING ACURIA FLOWERS (*A Subscriber from the First*).—"You are quite right in picking off the male flowers if the authors are covered with pollen; it will be needless gathering them if the authors are unripe. I do not consider wrapping them up in paper the most advisable mode of preserving them, as they are liable to dry into a paste. After gathering our flowers we put them in a pill-box in which the pollen keeps very well, and from which we gather it with a camel-hair brush. As was

mentioned last week, all this trouble probably will eventually prove unnecessary, and by a judicious choice of varieties the flowers will fertilise themselves. At the present time all my female *Acurias* are in bloom, and with the exception of *ma maculata* all my male blooms are over. This variety is now covered with buds and blossom in the open ground, and is much superior to every other male for fertilising purposes on account of its large spikes of bloom opening at the same time as the female flowers. If you touch the pistils ever so slightly with the pollen it will be quite sufficient, and no further attention need be paid them."—*GULIELMUS.*

APPLE AND PEAR SPURS UNFRUITFUL (*Reader*).—It is difficult to explain why some spurs on the Apple and Pear tree have foliage only, whilst others are full of bloom; but the former are natural, and the tree would very soon cease to exist if all the spurs produced bloom, and there were no leaves except those produced at the base of the fruit-bearing spurs. The spurs having a bloom bud this year will never have another; but whether it fruit or not, its office is at an end with the year of its expanding. The spurs for future fruiting must be produced from its base, or on another part of the spur or tree, and they take two, three, or more years to undergo the natural transformation from a spur producing foliage only to one having bloom, and afterwards fruit. Now, if there were none of the latter, there would be few of the former, for though bloom buds on both the Apple and Pear are occasionally the result of one year's growth, they are more generally, and with the best of cultivators, the work of nature and not of man, for two, three, or more seasons. They are useful because by means of the foliage they assist in the appropriation of the food absorbed from the soil and atmosphere, and acquire from them that by which they are formed into fruit buds; hence your conclusion that the wood spurs or buds are not convertible into fruit buds is incorrect. In a maiden plant there are no fruit buds, and if there were no wood buds there would never be any fruit buds. As to grafting or budding from fruitful trees only, you will, no doubt, secure an earlier produce, but that will not give you trees without barren spurs, and we never saw all fruitful spurs, or all fruitful buds on a tree without the next year seeing an entire absence of bloom and fruit. We think no good will come of your proposed experiment except the securing in two or three years' time what you might effect in one, by stopping or judicious summer-pruning, and root-pruning, along with the thinning of the spurs.

APRICOT AND PEACH BLOOMS NOT SETTING (*S. M. D.*).—We can only account for the Peach and Apricot blossom not setting by its not being sufficiently protected from the cold weather we have lately experienced, though from its not looking healthy it is probable that the buds, owing to the drought of last season, were not sufficiently matured, which a few good waterings in dry weather might have prevented.

BRITISH FERNS FOR AREA (*Eastbourne*).—*Asplenium trichomanes*, *A. viride*, *Blechnum spicatum multifidum*, *Cystopteris fragilis*, *Polypodium vulgare cambricum*, and *Scopolopodium vulgare multifidum*.

HEDYCHUM TREATMENT (*Idem*).—The plant should now be repotted if it require a shift, using a compost of two parts sandy fibrous loam and one part peat or leaf mould, and affording free drainage. Place it in a greenhouse or vinery, give it a light airy position, and keep it well supplied with water until the growths are complete; then gradually lessen the supply, and in winter keep the plant dry, but not so much so as to cause the foliage to decay prematurely.

WOODLICE IN TAX (*H. W. R.*).—Nothing harbours these pests so much as tan. They are best kept under by placing a few loads in a house; and they may be trapped by placing a boiled potato wrapped lightly in a little dry hay at the bottom of a small flower pot, laying the pot on its side in the evening in places frequented by the woodlice. Examine the pots in the morning, and shake the woodlice secreted in the hay into a bucketful of boiling water.

SOWING CAMELLIA SEED (*An Amateur*).—Now is a good time to sow *Camellia* seed, but it would have been better sown in March. Two parts sandy peat and one part light loam, with a free admixture of sharp sand, are a suitable compost. They will succeed if placed in a Cucumber frame, the seed being sown in pots plunged in the hotbed.

CLEANING MARBLE STATUARY (*Omicron*).—Your question ought to have been answered last week, but your letter was mislaid. Take of common soda powdered a quart, powdered chalk a pint, and pounded or powdered pumice-stone, sifting all through a fine sieve. Mix with water to the consistency of paste, rub the marble all over with the paste, and then wash with soap and water.

CUTTING BACK A LAURUSTINUS HEDGE (*W. T. G. C.*).—From the present time up to the middle of May is the best period for cutting in a *Laurustinus* hedge; or the operation may be deferred until the blooming is past. The hedge may be cut in to any extent, as the plant bears cutting exceedingly well.

PLANTING FILBERT TREES (*Idem*).—The best time to plant Filberts is in autumn or early in winter, after the leaves have fallen; and planting may be performed up to March, but the earlier it is done the better. The trees should be planted 10 feet apart every way, and they should be trained erect, heading them over at 18 inches from the ground, training with one upright stem, and removing all suckers as they appear. The last is the most important point in the cultivation of the Filbert, if not the most important.

GRAPES (*E. S. Chelsea*).—The substance on the reds of the Vines with a "woolly covering and blood under the substance," is probably American blight, though it may be mealy bug. To have made sure, you should have sent us a specimen. Both may be destroyed by brushing the parts affected with Gishurst compound, Clarke's preparation for mealy bug, or Fowler's insecticide.

STOPPING ROCHEA FALCATA (*Idem*).—You may stop the plant until the end of June to make it more bushy, but it will not flower until the following year. We cannot say that it would flower this year if not stopped, but we think not, as it is only 1 foot in height.

CUCUMBER CULTURE (*A New Subscriber*).—There will be some difficulty in properly attending to your frame, as you are absent from 8 A.M. to 1 P.M., and from 2 P.M. to 5 P.M.; but you may succeed tolerably well after this period, for at 8 A.M. you may give air, if it be likely to be a fine day, in such quantity as will prevent scorching until 1 P.M., and at that time you can reduce or increase the opening as may be required, partially reducing the ventilation at 2 P.M., and finally closing at five o'clock; but could you

not arrange with some one to shunt up the frame if the day prove cold, or if the morning be cold or dull to open the lights in case of the day turning out fine? You will do no good by shading the lights. One plant will be sufficient to put under each light of 6 feet by 3 feet. Two plants would render the frame too crowded.

PIT CONSTRUCTING (J. T. S.).—The furnace may be 2 feet long, and have 1-foot-6-inch fire bars, and may be 14 inches wide and the same in height, with an arched top; all the parts in contact with the fire should be of fire bricks, at least the furnace should be cased with them, and the flue for about a yard at the sides from the furnace should be built of fire brick and covered with 8-inch fire ties. The height of the bottom of the flue above the furnace should be from 1 foot to 15 inches, and the flue should run across one end, along the front, and return along the back to the place it started from, having a slight ascent the whole way. It may then be taken up about 8 feet above the pit lights, and have a chimney pot. You may have an opening at the side for cleaning out the flue, but it is better to take off a covering tile at the corners when the flue requires cleaning. The lights may be 3 feet wide for the length you name (8 feet), and should be related for glass on one side only. The frame for the lights may be 3 inches by 2½ inches, the bottom rail 3 inches by 1½ inch, and the sash bars 2 inches by 1 inch, having two to each light, so that you will have squares of glass nearly 10 inches wide, and they may be 15 inches long, which are the sizes we recommend. The timber should be of the best yellow pine, though for durability red deal is best. The wall plates should be fully the width of the walls, which may be 4½ inches thick above the ground, and we would sink it 3 feet in the ground if we could without striking water.

PREPARING A RHODODENDRON AND CAMELLIA BORDER (Cornubia).—It is likely that your heavy clayey loam is of that description in which Rhododendrons flourish, as they do in that overlying freestone; and in this case we would only trench the border deeply without turning up too much of the clay, and in planting make a hole large enough to admit of about half a barrowful of peat being placed round the ball of each plant

—indeed, planting in the peat soil. If, however, it is of a character injurious to the Rhododendron, then we would take out the soil of the border to the depth of 2 feet, and replace it entirely with peat. We fear you will not be able to grow Rhododendrons and Camellias in the same border; but if you do, the Camellias should be at the back and the Rhododendrons in front. For the Camellias use a compost of light turf loam, the top 12 or 2 inches of a pasture chopped up rather finely; to two-thirds of this add one-third of fibrous peat, and well mix the whole. The border should be increased in width to 6 feet, and that would accommodate two rows of plants, and we should have them all Camellias or all Rhododendrons. If you prefer it, place the Camellias in the centre, with the Rhododendrons at the sides, in the form of two wings, dividing the border into three parts, using soil suitable for each plant. You will find a list of Camellias suitable for out-door culture at page 256 of the present volume, and you can arrange the colours to suit your taste. We cannot plant, but are always willing to criticize proposed planting. Some of the best Rhododendrons are:—*Atrorhagnum*, blood red; *Barclaynum*, reddish rose; *Blanche Superbe*, white, green eye; *Blandyanum*, reddish crimson; *Blatium*, rosy lilac; *Braynum*, rosy scarlet; *Bride*, white; *Chloe*, crimson lake; *Comet*, scarlet; *Faust*, lilac; *Hogarth*, rosy crimson; *John Waterer*, crimson; *Lady Dorothy Nevill*, purple, spotted black; *Lefevreanum*, purplish crimson; *Maculatum purpureum*, purplish rose, spotted; *Madame Miot*, shaded off to straw-brown spots; *Papilionaceum*, lilac, changing to white; *Pardolotum*, claret; *Perryanum*, rose, spotted; *Pluto*, purplish crimson; *Sydney Herbert*, crimson, with black spots; *Twardi*, rosy lilac; *Victoria*, plum; *Victoria (Pince's)*, claret; and *William Downing*, dark puce, blotched.

NAMES OF PLANTS (G. S.).—We think it is *Primula decora*, but the specimen was quite withered and injured. (*Julia*).—*Ruscus aculeatus*, or Luther's Brodia. (*J. W. F.*).—We cannot name your Azalea, nor any varieties of florists' flowers, they are in legions with mere shades of difference.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 20th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 14	29.937	29.832	78	51	53	48	E.	.02	Fine, foggy; very fine; cloudy but fine; very hot.
Thurs. 15	29.721	29.581	64	41	55	49	S.W.	.00	Cloudy and fine; overcast; densely overcast, cold wind.
Fri.... 16	29.241	29.139	57	43	52	49	S.W.	.26	Overcast, slight rain; stormy; heavy rain at night.
Sat.... 17	29.500	29.245	53	43	51	48	N.W.	.02	Stormy and cold; boisterous; densely overcast, rain.
Sun... 18	29.952	29.746	52	26	50	48	N.	.00	Boisterous and stormy; cloudy; clear and frosty.
Mon... 19	30.081	29.954	55	42	59	48	W.	.00	Cloudy, fine; very fine; heavy clouds at night.
Tues.. 20	29.851	29.738	54	28	50	47	S.	.02	Densely overcast; cloudy; slight rain; densely overcast.
Mean	29.755	29.583	59.00	39.14	51.57	48.14	—	0.32	

POULTRY, BEE, AND PIGEON CHRONICLE.

FEATHER-EATING FOWLS.

I QUITE agree with your correspondent respecting the evil of giving fowls too much meat; in fact, I believe it a mistake to give fowls in a confined space animal food at all, for in my opinion it vitiates the blood and renders them extremely unhealthy. A friend of mine, a keeper of a very large number of Spanish fowls, was troubled by their having the same propensity. He used to feed his fowls on sheep's paunch until they became literally naked, like birds dropped from the hooks of a poulterer's shop. He certainly succeeded in obtaining a great quantity of eggs at the expense of ageing his birds, but after a little persuasion he discontinued the practice, and at the present time they are in perfect health and plumage.

Persons keeping poultry must not be afraid of a little trouble; good corn, a plentiful supply of green food, clean water, and a frequent change of earth in the run are everything that is required. I have adopted with great success the following plan—namely, placing a litter of long straw in a covered part of the run; a few handfuls of corn will afford the birds an endless source of amusement, and when tired they will nestle down, showing a striking contrast with their white faces, red combs, and beautiful black plumage. I believe that if this plan were adopted by persons having small places, we should hear no more of this much-vexed question of feather-eating fowls.—W. POOLE HIX.

PRODUCE OF EGGS.

I READ with great pleasure the account from "C. B., *Warrington*," of the number of eggs laid by his thirty hens. You will recollect that I some time ago expressed a hope that poultry-keepers would write and you insert any authentic statements relative to the laying capabilities of the different breeds. "C. B." does not classify them so that we might be able to judge which is most productive of the sorts he enumerates.

I keep nothing but Brahmas. I have sixteen hens, which

laid in January 147, in February 203, and in March 339 eggs. Out of the sixteen hens two were set on thirteen eggs each on the 7th of March and one on the 15th, reducing the laying fowls after that to thirteen. One old fowl, three years old now, which commenced laying in October, 1866, and of which you have heard before, has laid 480 eggs up to to-day! The food they have consists of white peas, barley, and barleymeal mixed with brewers' grains. Peas I hold to be good, if not the very best, hard food for egg-producing.—J. P.

DUBLIN POULTRY SHOW.

As a whole this Show was of unusually good quality; and, somewhat remarkably, many classes that in England are commonly deficient in close-breeding, were here represented far better throughout than at the longest-established of our principal meetings. The taste for poultry is evidently greatly on the increase in Ireland, both for table use and as regards fancy breeds. No doubt this progress has been induced by the enthusiasm of such eminent local breeders as are noticed in the subjoined prize list, and we do not doubt if the imperative rule were relaxed at Dublin, that every exhibitor must send an attendant to see to the poultry during the continuance of the Show, entries would be much more numerous even among those intimately connected with the Show, whilst the increased number of pens from Scotland, England, and Wales would as surely produce a greatly-increased revenue. A little different arrangement as to the opening of the pens themselves would also be a step forwards in the path to perfection; for as now constructed, with the doors to take down completely, the chance of the escape of a second fowl is imminent, even during arbitration, and equally so in repacking. If the doors were hinged in any way to either side, the chance of escape might be rendered far less probable.

Both Grey and Silver-Grey *Dorkings* were exceedingly well shown. The *Spanish* class was also excellent. Dark *Brahmas* were really first-rate, but the Light-coloured were deficient in quality. The White ones excepted, neither variety of *Cochins* was so good as might have been expected; nor were the *Game* fowls and *Hamburghs* as good as we hoped for. *Polands*, however, which in England are now so fast failing, here most unexpectedly proved one of the very best classes in the Show. They have very rarely been equalled, particularly the Black with White Crests. The Dublin Committee, however, add prizes for *White* *Polands* with *Black* Crests, a breed, we fear, long

since extinct, but we still hope the proffer of such premiums will bring them out, if any are still extant. That such birds were to be found sixty years back at a few places in England is testified by witnesses still living. The French fowls generally were remarkably good, and the Single Cock classes were mostly well filled with capital birds.

Game fowls in Ireland evidently want the show and fire of those exhibited in England, the Game birds of the Sister Isle evidently showing more of the rough-and-tumble character of the cockpit than the racy and blood-like nature of the English breeds.

In *Turkeys* and domestic Waterfowl nothing could exceed the Dublin Exhibition, and as regards the Ornamental Waterfowl class, it proved most interesting and instructive. It was unquestionably quite a prominent feature of the Exhibition. In the Selling class, the rule that the claimant and the exhibitor must settle their own arrangements, admits of an undoubted improvement, for by a collusion between buyer and seller the public at present can be ousted altogether from any possible chance of securing pens at the affixed maximum price, 30s. the pen.

The weather was most satisfactory. His Royal Highness Prince Arthur, the Lord-Lieutenant of Ireland, and a numerous retinue were present. Military bands efficiently aided the cause, and more than fifteen thousand persons attended.

DORKINGS (Silver-Grey).—1, 2, and 3, Mrs. Warburton, Kill, Naas. c, S. Mowbray, Killeeney, Monstrath.

DORKINGS—1, F. W. Zurborst, Dublin (Coloured). 2, J. C. Cooper, Cooper Hill, Limerick. 3, Mrs. Warburton (Coloured). c, R. P. Williams, Glaslinn, Clontarf.

SPANISH—1 and *hc*, Hon. Miss Douglas Pennant, Pearhyn Castle, Bangor. 2, Miss De Courcy Drevar, Blackrock, Co. Dublin. c, R. P. Williams.

BRAMA POOTRA—1 and *hc*, R. W. Boyle, Marino, Blackrock. 2, Hon. Miss Douglas Pennant. c, Mrs. Warburton (Dark); Hon. J. Massey, Limerick (Dark).

BRAMA POOTRA (Light)—1, Capt. Downman, Dublin. 2, J. C. Cooper. **COCHIN-CHINA (Buff)**—1, J. W. Sutherland, Priorsland, Carrickmines. 2, F. W. Zurborst.

COCHIN-CHINA (White)—1, F. W. Zurborst. **COCHIN-CHINA (Brown or Partridge)**—1, R. P. Williams. 2, A. E. Usher, Camphire, Cappaghin.

GAME—1, J. C. Cooper. 2, C. E. McClinton, Randalstown, Co. Antrim (Black-breasted Red).

HAMBURGERS (Pencilled)—1, C. E. McClinton (Golden-pencilled). 2, F. W. Zurborst.

HAMBURGERS (Spangled)—1, O. Cooney, Dublin (Golden-spangled). 2, S. Mowbray (Gold-spangled).

WHITE-CRESTED BLACK, OR BLACK-CRESTED WHITE FOWL—1, Miss De Courcy Drevar (White-crested Black). 2, J. K. Millner, Cherbury, Blackrock (White-crested Black). *hc*, Miss De Courcy Drevar (White-crested Black). c, R. P. Williams (White-crested Black).

POLANDS (Gold or Silver)—1, F. W. Pim, Greenmount, Harold's Cross (Silver). 2 and c, R. P. Williams, Glaslinn, Clontarf, Dublin (Crested Silver and Gold-spangled).

LA FLÈCHE—1, G. A. Stephens, Dublin. 2 and c, J. C. Cooper. **HOUDANS**—1, J. C. Cooper. 2, F. W. Pim.

CARVE-CEUR—1, F. W. Zurborst. 2 and *hc*, J. C. Cooper. **ANY OTHER VARIETY**—1 and 2, J. C. Cooper (Sultan and White Rose-combed Dorkings). c, F. W. Zurborst (Silly Negroes).

GAME BANTAMS (Any variety)—1, F. W. Zurborst. 2, G. F. D. Sutherland (Black Red Game).

BANTAMS (Any other variety)—1 and 2, Mrs. Stanton, Glondalkin, Dublin (Black and Abyssinian Tailless). c, F. W. Zurborst (Black).

TURKEYS—1 and *hc*, J. C. Cooper. 2 and 3, J. Tait, Cullen, Mullingar, (American). c, Rev. J. Sullivan, Leopardsden, Stillorgan.

GREES—1, J. C. Cooper. 2 and 3, Mrs. Warburton (Emblen). *hc*, J. Tait (Toulouse). c, R. W. Boyle; K. P. Williams (Toulouse). c, A. E. Usher (Toulouse).

DUCKS (Rouen)—1, R. W. Boyle. 2, S. Mowbray. *hc*, R. P. Williams. **DUCKS (Aylesbury)**—1 and 2, Mrs. Warburton. *hc*, J. C. Cooper; F. W. Zurborst; G. A. Stephens. c, R. P. Williams.

SELLING CLASS (Any variety)—1, Mrs. Warburton (Silver-Grey Dorkings). 2, R. P. Williams (Silver-spangled Hamburgers). 3, Miss De Courcy Drevar (Grey Dorkings). c, C. E. McClinton (Golden-pencilled Hamburgers).

WATERFOWLS (Ornamental)—1 and 2, R. P. Williams (Upland Geese New Zealand, and Shell Ducks). c, M. Wright, Braganza, Dalkey (Black East Indian).

SINGLE COCKS.

DORKING—1, Mrs. Warburton (Silver-Grey). 2, G. A. Stephens. *hc*, J. C. Cooper; J. Barlow, Chapelizod (Silver-Grey). c, A. E. Usher (Silver-Grey); Hon. J. Massey.

SPANISH—1, Hon. Miss Douglas Pennant. 2, G. A. Perrin, Chantilly, Loughlinstown. *hc*, J. C. Cooper; R. P. Williams.

COCHIN-CHINA—1, J. W. Sutherland, Priorsland, Carrickmines (Buff). 2, F. W. Zurborst (Buff). *hc*, F. W. Zurborst (White); W. H. Perrin (Partridge).

BRAMA POOTRA—1, Hon. Miss Douglas Pennant (Dark). 2, R. W. Boyle. *hc*, Hon. J. Massey, Milford House, Limerick. c, A. E. Usher (Dark); R. W. Boyle; Mrs. Warburton, Kill, Naas, Co. Kildare (Dark).

LA FLÈCHE—1, G. A. Stephens. 2, J. C. Cooper. **HOUDAN**—1, Hon. J. Massey. 2, J. C. Cooper.

CARVE-CEUR—1, F. W. Zurborst. 2, J. C. Cooper. **GAME**—1, G. A. Perrin. 2, C. E. McClinton. c, J. C. Cooper.

TURKEYS—1 and 2, J. C. Cooper. *hc*, Hon. J. Massey.

PIGEONS.

POUTERS (Any colour)—1, Withheld. 2, J. K. Millner, Cherbury, Blackrock, Dublin (Red).

TUMBLERS (Any variety)—1, R. W. Wallace, Belfast, Donnybrook, Dublin (Almonds). 2, E. M'Crae, Altona, Stillorgan.

FANTAILS—1, J. M'Donnell, Upper Rathmines. 2, Mrs. E. Seale, Cottage Park, Kilgobbin.

JACOBIANS—1, J. M'Donnell. 2, J. K. Millner, Cherbury (Yellow). c, Mrs. Perrin.

OWLS—1, O. Cooney, Dublin. 2, N. E. Wallace (Silver).

BARRAS—1 and 2, E. M'Crae.

TUMBLERS—1, L. F. Perrin. 2, E. M'Crae.

ANY OTHER BREED—1, E. M'Crae (Isabels, or Austrian Pouters). 2, L. F. Perrin (Blue Rants). 3, J. M'Donnell (Antwerp Carriers).

Edward Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham; Alexander Comyns, Esq., Glenaguary, Kingstown; and William Getty Merry, Esq., Blesinton, officiated as Judges of both poultry and Pigeons.

OTLEY POULTRY AND PIGEON SHOW.

THIS year's meeting far excelled the generality of agricultural shows as to the division for poultry. By a slight reference to the appended prize list it will be seen that a greater number of the best breeders in England exhibited than is customary on such occasions. The Otley Show, however, might be improved by closer adherence to the general regulations. Birds arriving continuously for some hours after the specified time, were allowed to compete—a procedure scarcely fair to those owners who at considerable personal trouble sent in their birds to time. The pens, also, for the Pigeons were sadly too low; Pouters vainly attempting to show themselves in pens scarcely 9 inches in height, and a pair of good Blue Rants only made this want of space the more visible, as they seemed as closely packed as though tied together.

The birds, however, were carefully fed and attended to, but a sudden thunderstorm shortly after midday was a sad drawback to the comfort of the visitors. Still the Committee did all that men could do to make things as comfortable as circumstances permitted.

SPANISH (Black)—1, H. Beldon, Goitstock, Bingley. 2, F. H. Haworth. *hc*, W. & F. Pickard, Thorne; T. C. & E. Newbit, Epworth.

DORKINGS—1, H. Beldon. 2, T. E. Kell, Wetherby. *hc*, C. Triffitt, Cattal, Green Hammerton; J. B. Britton, Hunslet.

COCHIN-CHINA—1, H. Beldon. 2, C. Sidwick, Keighley. *hc*, J. Dixon, North Park, Bradford; W. Barnes, Thirsk; J. Clarke, Beeston, Leeds; F. H. Haworth, Haslingden.

BRAMA POOTRA—1, W. Severs, Kirby Fleetham. 2, H. Beldon.

GOLANDS—1 Cup, and 2, for best pen of any breed except Game, H. Beldon. *hc*, G. Carter, Sand Hill, Bedale. c, T. Crossley, jun., Wetherby; G. Carter.

GAME (Red)—1, H. Jennings, Allerton. 2, J. Beetham, Bradford. *hc*, Lund & Lambert, Silsden (Black Red); Moody & Habishaw, Otley; W. Spencer, Haworth; W. Johnson, Idle; H. Jowett, Wrose Hill, near Shipley.

GAME (Grey or Blue)—1 and Cup, for best pen of Game, W. Bearpark, Ainderby Steeple, Northallerton. 2, J. Fortune, Morton Bank, Keighley. c, D. Ashworth, Halifax.

GAME (Any other variety)—1, Withheld. 2, H. C. Mason, Drighlington. **HAMBURGERS (Golden-spangled)**—1, H. Beldon. 2, J. Pickles, Slaithwaite. *hc*, J. Fortane, Morton Banks, Keighley; H. Beldon.

HAMBURGERS (Silver-spangled)—1 and 2, H. Beldon. *hc*, T. Fawcett, Baildon.

HAMBURGERS (Golden-pencilled)—1 and *hc*, H. Beldon. 2, W. W. Clayton, Morton Bank, Keighley.

HAMBURGERS (Silver-pencilled)—1 and 2, H. Beldon.

HAMBURGERS (Black)—1, E. Baxter, Idle. 2, H. Beldon. *hc*, C. Sidwick.

GAME BANTAMS—1 and 2, Moody & Habishaw, Otley. *hc*, G. Carter. c, W. Graves, Bradford; F. Steel, Halifax.

BANTAMS (Black)—1, S. & R. Ashton, Mottram, Cheshire. 2, W. Brotherton, Idle. *hc*, W. Clayton, Morton Banks, Keighley; T. C. Harrison, Hull. c, D. Frith, Gaisley.

BANTAMS (White)—1, H. Beldon. 2, S. & R. Ashton.

BANTAMS (Any other variety)—1, T. C. Harrison. 2, H. Beldon. *hc*, H. Yardley.

ANY OTHER DISTINCT BREED—1, H. Beldon (French). **DUCKS (Rouen)**—1, J. Dixon. 2, J. Mason, Borongbbridge. *hc*, J. Dixon. c, W. Bentley, Bradford; J. Hartley, Otley.

DUCKS (Aylesbury)—1, Withheld. 2, A. Duncan, Otley.

DUCKS (Any other variety)—1, J. Dixon (Mandarin). 2, S. & R. Ashton (Carolina). *hc*, J. Dixon (Bahama and Carolina); A. Fawkes, Otley. c, T. C. Harrison.

TURKEYS (Any colour)—1, A. Fawkes. 2, S. Beecroft, jun., Fawston. **SELLING CLASS**—1, H. Beldon. 2, J. Berry, Silsden, Bell Square. *hc*, J. Berry; E. Lund, Silsden.

PIGEONS.

TUMBLERS (Short-faced)—1, C. Cowburn, Calls, Leeds. 2, H. Yardley, Birmingham. *hc*, J. Hawley, Bingley; J. Mason, Borongbbridge.

TUMBLERS (Common)—1, J. Hawley. 2, W. Lund, Shipley. *hc*, W. Shelton, Idle. c, W. Shelton; E. Horner, Harewood.

FANTAILS—1, J. Hawley. 2, E. Horner. *hc*, H. Yardley.

POUTERS—1 and Cup for best pen of Pigeons shown of any breed, H. Snowden. 2, J. Hawley. c, W. C. Dawson, Otley.

BARRAS—1, J. Hawley. 2, E. Horner. *hc*, W. C. Dawson; H. Yardley; C. Cowburn; W. Edmondson, Denton.

OWLS—1 and 2, W. C. Dawson. *hc*, F. Steel.

CARRIERS—1, H. Yardley. 2 and c, E. Horner. *hc*, W. C. Dawson; J. Hawley.

TURBITHS—1, J. Mason. 2, H. Yardley. *hc*, E. Horner.

JACOBIANS—1, E. Horner. 2, J. Hawley. *hc*, J. Mason.

ANY OTHER VARIETY—1, H. Yardley. 2 and c, J. Mason. *hc*, Lund and Lambert (Dragoons); H. Yardley; J. Hawley; W. C. Dawson (Ice); E. Horner; T. Rhodes, Otley (Blue Dragons).

The Judge was Edward Hewitt, Esq., of Sparkbrook, near Birmingham.

CANNIBAL DOE RABBITS.

I DESIRE to thank "L. B.," in your impression of the 28th of January, for the hints on feeding a cannibal doe Rabbit. Since then I have supplied her with milk nearly every day, but

she did not care for it, and I had to mix corn with the milk to get her to lap it; she had also as much green food as she would eat. The result is a litter now a month old. Does "A FOREMAN" keep the key of his Rabbit house in his pocket, and let no one but himself go near his cannibal doe? I believe many litters are lost by the does being disturbed before as well as after they have kindled.

Taking young Rabbits from the does too soon, and not giving them a sufficient variety of green food, are likely to give them, the "pot."—W. D.

BEE-KEEPING IN LANCASHIRE.

BELOW is my experience of bee-keeping, commencing in 1867 with two purchased newly-lived top swarms in common hives.

No. 1, hive of willows, plastered, swarm of 1867, June 21st. No. 2, common straw hive, plastered, swarm of 1867, June 20th. No. 3, common straw hive, top swarm from No. 2, June 18th. 1868; bees 4½ lbs. No. 4, wood box hive, 13½ by 13½ by 10 inches, eight bars; top swarm from No. 1 June 18th, 1868; bees 4½ lbs. No. 5, wood box hive, 13½ by 13½ by 10, eight bars; second swarm off No. 1, joined to second swarm off No. 2 July 1st and 2nd, 1868; bees not weighed; both were very weak swarms.

1868, August 10th.—Took Nos. 1, 2, and 5 to the heather, fifteen miles.

1868, October 10th.—Brought bees from heather; weighed all the hives as follows:—No. 1, 49 lbs. nett. bees and honey; No. 2, 48 lbs.; No. 3, 14 lbs.; No. 4, 25 lbs.; No. 5, 15 lbs. The last two remained at home.

October 11th.—Commenced feeding Nos. 3, 4, and 5. 1869, April 6th.—Weighed bees. No. 1, 35 lbs. nett. bees and honey; No. 2, 32 lbs.; No. 3, 25 lbs.; No. 4, 28 lbs.; No. 5, 19 lbs.

All has been outlay so far. I expect this year to obtain some honey for my pains, and the little money I am out of pocket. All the hives are home-made, and all the information has been acquired from "our Journal," the "Manuals for the Many," and Taylor's "Bee-keeper's Manual." The hives seem in a fair way of doing, and on giving them clean floor-boards yesterday, not twenty dead bees were to be found in the whole five hives.—J. H. B., *Warrles, near Kirkham.*

OUR LETTER BOX.

BOOK (B. E.).—M. Jacquet's is not practical, and the other you name is merely made up from other sources.

HENS PLUCKING EACH OTHER (*A Subscriber*).—We have for some time been plagued with the same. In the experience of nearly half a century we have never had it before. We believe we have stopped it by using ointment made with bitter aloes. We lubricate the spots with the ointment, and the fowls seem to dislike it.

FOWLS BREATHING WITH DIFFICULTY (*Henriette*).—The best cure for the difficulty of breathing is to give camphor pills. A feather put down the throat, turned round, and pulled out, will sometimes give relief, but it is only temporary, and if the complaint is at all of old standing, it chokes them. A little very old strong beer does them good.

DOVELE EGGS (*Disconsolate Little Cock*).—We cannot tell you of any cure for double eggs. The birds die of rupture, caused by straining to lay them. If they be watched when about to lay, and the passage be oiled by passing a wing or tail feather saturated with oil till it meets the resistance of the egg, the latter will be laid without difficulty. All the mixtures of food are bad; feed on good oatmeal or ground oats, some whole corn for a change, and a few table or kitchen scraps. Nothing more is wanted.

SELECTING GOLDEN-PENCILLED HAMBURGS FOR EXHIBITION (*Amateur and Subscriber*).—It is difficult to say at what age you can select a prize-taking Pencilled Hamburg. It is easier to detect the faults than the virtues. Crooked combs and hump backs soon show themselves at a few weeks old, and are easily detected even at a distance. Birds with these will never be prizetakers. At four months old you may select the best; but as after that age deaf-ears whiten, spots disappear, and something like plumage begins, you should keep six or eight of them till a further development enable you to select three; these should be kept to guard against accidents.

CRÈVE-CŒUR COCK LOSING ITS FEATHERS (*T. A. L.*).—We expect the hens eat the feathers. Rub the naked parts with bitter aloes made into an ointment, if he has to remain with the hens. If you can conveniently put him by himself, do so, and rub the bare spots with sulphur ointment.

HENS NOT LAYING (*Notice*).—You cannot expect hens to lay as soon as they arrive at a new place, nor to continue to do so every day. The state of the shells proves that something is wrong. It is more than probable that by waiting you will find the lime and rubbish will do their work in providing shell, while the fixed fine weather will cause regular laying. A spin on the leg of a hen is no proof of age. Dorking, Game, and Houdans all have spurs, frequently while almost chickens.

WHITE JAPANESE GAME (*Observer*).—We saw some of the same breed about ten years ago, but have seen none since. They bred in England, but were foolishly afterwards allowed to run promiscuously in a yard. We advise you to divide the eggs for purposes of sitting, that entire failure may be impossible.

INSECTS IN HEN'S CROPP (*I. W. H.*).—The insects, of which you found as many as one hundred in the crop of your White Dorking hen, which died suddenly last week, are the common small dung beetle with red wing-covers (*Aphodius dimidiatus*), which may be seen flying over every patch of recently dropped dung. Except in the hard texture of their coats there is no reason why these beetles should be more likely to have caused the death of the bird than any other insects which hens eat greedily.—W.

HOUDANS (*J. C. E.*).—A description and drawings of them are in "The Poultry-keepers' Manual," which you can have sent post free from our office if you enclose 7s. 10d. with your address. Rice in any form is unsuitable for chickens, it affords so little nourishment.

MEAL (*James Kirkland*).—We are quite sure that all such compounds are delusions. Nothing is better as poultry food than crushed oats, and crushed barley. For fattening, Indian meal is good, and the meal in question has it for its basis.

WATER POULTRY (*Lemon Buff*).—We do not think that there is any difference between hard and soft water for fowls, provided it is free from impurities.

STOCKING A DOVECOTE (*R. H. C.*).—We believe that the true Blue Rock Dove is very scarce. Thousands of so-called Rock Doves, but really Dovehouse Pigeons (the Chequered Dovehouse Pigeon), are each year sold by dealers for Blue Rocks. Buy some of these, as your object is the formation of Pigeon pie. At the same time we should recommend a few common Runts to be mixed with them to make the breed larger. These, also, any dealer can procure. In all cases the birds must be confined until they have young ones, being enclosed for a time by a wire frame like a fire-guard, then they can be let out and learn the locality. We would advise you for further instruction to procure Brent's "Pigeon Book," post free from our office for twenty stamps, and consult pages 14, 85, &c.

AGE OF PIGEONS' EGGS FOR SITTING (*Pigeon Fancier*).—It is usually believed that Pigeons' eggs will be good for about a fortnight.

CROSS-BREEDING (*Canary*).—"It is possible to breed from birds of any variety of colour, but not always judicious. The cross you mention (a hen a cross between a yellow and a green and a yellow male) is not the best selection that could be made. I apprehend the hen is either a yellow with black under-blue, or a broken yellow green, not mealy. Having two strains of Jouque you will obtain colour, but most likely at the expense of compactness of feather."—W. A. BLAKSTON.

BULLFINCH ASTHMATIC (*A Constant Reader*).—Your Bullfinch is troubled with asthma, keep it in a warm place and free from all draughts, and not in a room where gas is burned; and try eight to ten drops of brandy in the usual quantity of water, fresh every day for a week or so; notice if the bird takes the water, if not try less brandy.

SISKINA BREEDING WHEN IN CONFINEMENT (*Wateringbury*).—We do not know of any instance of Siskina breeding among themselves in confinement, and we are of opinion that they will not.

FOOD FOR A COCKATOO (*G. C.*).—Your bird requires a change of food; withdraw by degrees the bread and milk, that being too relaxing, and give it occasionally bread soaked with water, squeezed dry, and given to the bird cold; keep fresh water to drink; give it canary and hemp seed, not too much of the latter, Indian corn boiled or broken, nuts, apple, biscuit, cake, and occasionally a piece of bread soaked in beer or tea, which sometimes Cockatoos are fond of, but nothing of a greasy nature. Place the bird on a stand in the garden, and give it a good syringing every warm morning with tepid water.

YOUNG RABBITS DYING (*Cuniculus*).—We are so strongly of opinion that nature does all things aright, and brings all things to a proper conclusion, that when we meet with such a case as that you describe, we seek the cause of failure in our own arrangements. We should not be at all surprised if the milk of the foster mother disagreed with them. There are, no doubt, times when stimulating food is necessary to all the animal world, but we believe it is often injurious. Such a case as you describe does not happen to rabbits in a natural state. They obtain but roots and green meat to eat, their acquaintance with corn is very limited. We give those in hutches lots of bran and oats, varied now and then with a carrot for green meat. We think this is too heating. In most places the corn and bran may be diminished, and more green food given. Lettuce would, we believe, have cured your case. Our Rabbits never do so well as when the weather permits of plenty of southwilt, and we are able to give a large handful at a time of coarse grass, the luxuriant growth from under trees or near a hedge; we add thereto a little corn, and keep them well supplied with water. We believe the latter to be essential, and this treatment to be better than cure, because a preventive. We do not call carrots green food, turnips and swedes are better, but it is green and juicy stalk and leaf they require.

RABBITS (*Notice*).—We cannot give all the details needed. If you enclose seven postage stamps, with your address, and order "The Rabbit Book," it will be sent to you from our office post free.

COTTAGERS' PRIZE FOR SORPERING (*A Friend of Bees*).—We think it would be best to offer the prize for "the best super filled this season, and weighing not less than — lbs," without hampering the competitors further.

COMMENCING BEE-KEEPING (*R. H. C.*).—The usual mode of commencing bee-keeping is to agree beforehand with a neighbouring bee-keeper or bee-keepers for the purchase of one or more early swarms, which the seller will place in your own hives whenever they issue, and hand them over to you the same evening. We should prefer south-west to west as an aspect for bee hives.

TOADS (—).—They do not go into water, and certainly do not injure fish.

POULTRY MARKET.—APRIL 21.

We have scarcity and consequent high prices. There are indications of a better supply, and unless the trade improve there will be prospects of a diminution of price.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	6	5	0	Guinea Fowls.....	2	6	3	0
Emmal do.....	4	0	4	6	Partridges.....	0	0	0	0
Chickens.....	2	6	3	0	Hares.....	0	0	0	0
Goslings.....	6	6	7	6	Rabbits.....	1	4	1	5
Ducklings.....	3	6	4	0	Wild do.....	0	7	0	8
Pigeons.....	0	8	0	9	Grouse.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 29—MAY 5, 1869.	Average Temperature near London.			Rain in last 42 years.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
29	TH	Meeting of Royal Society, and Anniversary [Meeting of Zoological Society.	59.5	37.2	48.4	15	39 af 4	17 af 7	12af 11	58af 6	17	2	48	119
30	F		61.0	39.0	50.0	17	37 4	19 7	morn.	45 7	18	2	57	120
1	S	5 SUNDAY AFTER EASTER.	61.8	39.4	50.3	16	34 4	21 7	7 0	37 8	19	3	4	121
2	SUN		62.5	39.2	50.9	15	33 4	23 7	53 0	34 9	20	8	11	122
3	M	Meeting of Entomological Society, 7 P.M.	62.9	39.8	51.3	20	31 4	24 7	34 1	35 10	(8	18	123
4	TU	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	62.3	38.5	50.4	16	29 4	26 7	5 2	38 11	22	3	24	124
5	W		62.9	39.0	51.0	22	28 4	27 7	32 2	af 11	23	3	30	125

From observations taken near London during the last forty-two years, the average day temperature of the week is 61.8°; and its night temperature 38.9°. The greatest heat was 79°, on the 29th, 1840; and the lowest cold 18°, on the 29th, 1861. The greatest fall of rain was 1.26 inch.

HEADING DOWN NEWLY-PLANTED FRUIT TREES.



WHEN is the right time for the proper performance of this operation? Does a newly-planted tree require different treatment in respect to the pruning or shortening of the shoots from one that has not been transplanted? or may they each be treated alike, having no regard to the check experienced by the one, or the unabated vigour of the other? To the experienced this may appear a simple question. It is one, however, on which a great diversity of opinion exists; it is one, also, which is deserving of much consideration, as upon its proper understanding often, in my opinion, depends greatly the future of the tree.

However carefully we may transplant a tree, there is a certain check given; a certain disorganisation of the system takes place. Pruning has also the same tendency; although in plants whose root action is good its effects are generally a concentration of energy and increased vigour. I am of opinion that when the roots and tops are shortened at the same time, the check administered is twofold. With established plants we can prune to an eye with the certainty that it will push forth at the proper season. With newly-planted trees, however, we can do no such thing; there is in every case more or less risk. I therefore in practice like to plant as early as possible, and to wait until the buds begin to push in spring before heading down the trees; then the operation can be performed with satisfaction. With young trees so many buds are reckoned as so many branches. However late the trees may be planted, the same practice is adopted—that is, the trees are allowed to get into action before pruning is attempted.

In plants the sap flows in regular channels throughout the entire system. When action commences in spring the first greatest flush is in the channels of the previous year, towards particular buds, generally the terminal ones, which are the first to expand. By pruning, this regular flow is intercepted; in an established tree with regular root action new channels are soon provided, which are then of course more fully supplied than formerly, and increased vigour is the result. In the case of a newly-planted tree with impaired root action the flow is naturally the same towards the existing outlets—the terminal buds, and if they are wanting, having been pruned, the circulation is stayed, and strength is wanting to form new channels.

This may be arguing the point rather closely, and taking extreme views of the question. Ordinarily young trees are not much injured by transplanting, so that they require no very exceptional treatment; yet it is well to try to check them as little as possible. In the case of imported trees, or plants which have been some time out of the ground, it is often necessary to take the greatest care to make them survive. In this way I recommend general precaution, and the safest plan to follow is to wait until it is seen what action the trees are in before heading them down.

I have been induced to make these observations in consequence of reading a very interesting article by your able correspondent, Mr. Luckhurst, at page 203, on the "Culture of Hardy Fruit Trees," in which he recommends the shortening of the shoots at the time of planting. Some others, Mr. Luckhurst states, maintain that it is better not to do so until one year after planting. Now, as I could agree with neither of these practices altogether, although there are instances where either may be executed with advantage, or seemingly so, I have stated my views and my practice, which, although not patriarchal, has been somewhat varied in this line. I object to laying down for general adoption a rule which ought only to be adopted in exceptional cases. Mr. Luckhurst's experience, I have no doubt, may justify the practice he recommends. I can scarcely, however, understand him in his reasonings on the subject; they seem to me very vague. Possibly, however, that is my fault.—ARCHAMBAUD.

HELLEBORUS FÆTIDUS FOR VASES IN WINTER.

DURING the winter and spring it looks so dreary to see the vases empty, which in summer are filled with Pelargoniums, that we have tried several evergreen plants to fill the place of the gayer summer ones, and I can recommend as the best I have seen the wild Hellebore (*Helleborus fætidus*). It is strictly evergreen, the leaves hang most architecturally over the stone edges, and the flowers, which last during March and April, rise well above the foliage, the stems being so substantial that the plant is alike uninjured by wind or rain. Planted in October or November, the plants remain in perfection till taken out in May. They can either be kept always in pots of the proper size for the vases, and plunged during the heat of summer, or lifted, when moved, with a ball of earth round the roots, the latter plan being better if it is wished to multiply them.—E. B.

FRUIT PROSPECTS.

I FEAR that the severe weather we experienced during March and the early part of April has had the effect of reducing what was once a bright prospect of a good crop of wall fruit to that of a poor one, for on looking round to-day (April 22nd), I perceive unmistakeable traces of the effect of the weather on both the bloom and foliage of such tender fruits as Apricots, Peaches, and Nectarines. If they receive no further injury, the following is likely to be the result:—

Of Apricots, the best are the Breda, a small preserving fruit, and the Orange, but these have only an average crop; the Brussels, Moorpark, and Hemskerk, a very short crop; and the Royal Apricot, no fruit. This sort always exhibits tenderness with me, for this year the foliage has already been killed, and is breaking again.

Of Peaches, the greatest sufferers are the Vanguard, Chancellor, and Royal George. Their foliage is much

cut up, and most of the bloom is killed. The best for fruit are the Noblesse, Early Newington, and Téton de Venus; those with a short crop are the Violette Hâtive, Late Admirable, and Bellegarde.

Of the Nectarine, which is, generally speaking, a freer setter under difficulties than the Peach, yet quite as tender in foliage, there are signs of a good crop on such sorts as Hunt's Tawny, Brugnion, and Red Roman; while the worst are the Melting and Violette Hâtive. The last is generally unfruitful with me.

Of the hardier kinds of fruits, such as Plums, Pears, and Cherries, there is every prospect of a good crop on walls, standards, and pyramids. The first-named fruit is setting very thickly, the same may be said of the Cherry, but its crop is generally uncertain, as sometimes most of its fruit does not swell off. Apples are hardly forward enough, but there is an abundant show for bloom. I also anticipate a good crop of Filberts. There was a good show of bloom, which appears to have set well.

The foregoing account is only taken from the garden at Lillesden. It would be interesting to learn what prospects there are of a fruit crop in some of the eastern or northern counties.—THOMAS RECORD, Lillesden, Hawkhurst.

MARKET GARDENING IN FRANCE AND ENGLAND.—No. 6.

MUSHROOM CULTURE.

NEXT to the inevitable *salade*, there is no more necessary article for French cookery than the Mushroom. You may go into the Palais Royal, where dinners (such as would not satisfy a Brillat-Savarin or "D. G. M." of the *Times*, but which ordinary mortals, despite Thackeray's jokes on them in "Philip," find eatable), are served for three francs, including wine; and if you look down the list of dishes you will invariably find something or other with *champignons*, and you find them there, should you order this, supplied with no lavish hand. Or you may go into the Halles Centrales, those magnificent markets in the very heart of Paris, and there you will see pile upon pile of the savoury fungus white as a kid glove, of all sizes, and suited for all buyers, and you will see how rapidly the piles disappear. By way of contrast go into Covent Garden—you will see them but sparingly supplied and more sparingly purchased, and why is this? Is it that we cannot grow them? No; but they are regarded here, at least the cultivated ones, with some degree of doubt and suspicion, and, moreover, English cooks believe more in Onions, Cayenne pepper, and wine for flavouring. The French cook, whose taste is more cultivated, clings to the Mushroom, Tomato, &c., for producing his savoury dishes, and hence there is not the incentive to the growth there ought to be. The demand for them has, of course, stimulated their production, and has led to one of the most curious utilisations of supposed useless material that we probably can instance, although it may not be of any practical service in describing this process, as the materials to work upon are not to be had elsewhere.

Modern Paris, like ancient Rome, has itself supplied the materials of which it is built. Every visitor to the City of the Seine must have noticed those large wheels which appear on the surface of the soil everywhere in its neighbourhood. These are used for the purpose of bringing to the surface those huge blocks of stone which have been of late so largely used in the construction of the new city, which has been one of the boasts of the Second Empire, for, spider-like, Paris has found the materials for her dwelling; and from time to time, as the vein of stone becomes exhausted, or the quality deteriorates, these borings are abandoned. Notably is this the case at Montrouge. You may walk by these abandoned quarry-holes, and never would imagine there was anything going on beneath. Were you observant, you might notice large heaps of stable manure near them, and wonder what they could be intended for; and yet there is a culture going on underneath by which large numbers of people obtain their living, and of which the products are sent far and wide. I have detected the peculiar earth used in it clinging to the Mushrooms exposed for sale in the markets at Covent Garden, Brussels, Lyons, &c., and it was to see this culture that I devoted a day in company with my *compagnon de voyage*, M. Viret. It is no easy task to find out these *champignonistes*, nor, when you have found them, to induce them to go down with you. They are an independent set of men, are making money, and your five-franc piece is no great inducement to them, while the going down entails the expenditure of some considerable amount of time and labour.

However, we first found out Madame Froment, whose son kindly accompanied us, and we were in due course conducted to one of these openings, having first provided ourselves with candles, &c. To those who have descended coal mines or such other subterranean retreats, and who, like Lieutenant Warren in his exploration of Jerusalem, are said to delight in groping, it is nothing; but to staid and sober people like myself, who affect the upper air and level ground, whose backs do not bend so easily as they used, and whose heads are none of the steadiest for such work, the descent is an ordeal of no common nature. You looked down a large opening of about 70 or 80 feet in depth, and by an ingenious contrivance had to swing yourself on to a very rickety-looking swing ladder, which had to be repaired before we could venture on it; but I was committed to it, and so down we went. When we reached the bottom we were very soon in *medias res*. Galleries stretched on all sides, and into these we soon dived. As we wound along, the owner narrated to us sundry funny adventures he had had with visitors, amongst others of a certain Lord Mayor from the Emerald Isle, whose copious rotundity was considerably in his way in some of the passages, and who puffed, fumed, and steamed through them. Our conductor, besides being thoroughly used to it, being a thin spare man, could thread his way along easily where his more corpulent companion found considerable difficulty. All along these passages were long narrow beds of varying heights and sizes, but all small, and entirely different from anything we are used to in Mushroom culture. On these beds, which were covered with a peculiar calcareous soil, were Mushrooms of all sizes, from tiny little pins' heads up to good-sized teacups, some as white as driven snow, others with a faint tinge of buff. On we went. Sometimes we had the greatest possible difficulty to get along, so very low was the ceiling; and now and then we came upon an opening where a larger portion of the stone had been obtained, and here the beds were sometimes four, five, and six deep, but all of the same form—slightly rounded and low. The *champignoniste* would every now and then stop, bid us admire some fine cluster of his productions, and expatiate on their beauty. Some idea of the extent to which this culture is carried on may be gathered from the fact that this one man had ten miles of these beds in this subterranean garden, from which all through the year immenso quantities are daily sent into Paris.

In contrasting the method of culture adopted here with what I have seen and practised in England, I was struck with these differences:—1st, In all the directions given as to the preparation of the manure for the beds, we are told to keep it as dry as possible under a shed, where it will not be exposed to the influence of the weather. Now, here no such precaution is taken; and I was particularly struck with the very wet, almost sodden appearance of the manure. 2nd, I did not see that the beds were hardened by beating as ours are. The manure seemed to be just tidily put together and then flattened with a spade, but not made close and compact as with us, for I noticed that when our conductor came to a bed that seemed to him to have something not quite right about it, he could put his hand down far into the bed without any difficulty. 3rd, The growers seem to me not as a rule to put in their Mushroom spawn in the dry brick state in which we use it, but it is cut out in pieces wherever it can be easily obtained, and then inserted in a fresh state. Some close observers have stated that Mushroom spawn is more abundant in France than with us, and that there is never any difficulty in obtaining large quantities of it. I do not know whether this is so, but the French are, as I have stated, large growers of Mushrooms.

This "cave" culture has almost driven out the other methods of culture about Paris, for, as there is very little to pay for rent, Mushrooms can be more cheaply produced than when grown in the ordinary way. I fear there is not any practical benefit in what I have said on this subject, but I hardly liked to leave the vegetable culture of our neighbours without giving a slight notice of one of the most remarkable adaptations of old quarries which I suppose we are acquainted with.—D., Deal.

FUCHSIA RICCARTONI IN NEW ZEALAND.

I HAVE just read Mr. Robson's article on *Fuchsia Riccartoni* (see page 317 of last volume), and am able to bear testimony from the antipodes to the continued excellence of the same old favourite *Fuchsia*. For out-door cultivation, especially in cool moist places, it has no rival, and it attains a much larger size than I remember to have seen it do either in Great Britain or Ireland. In 1836 I travelled a considerable distance to see the

parent plant of the above named *Fuchsia*, at Riccarton, and on my arrival in Otago, in 1850, I was pleased to find my old favourite had preceded me.—G. MATTHEWS, *Dunedin*.

SETTING GRAPES.

DISCUSSION on any subject in the pages of THE JOURNAL OF HORTICULTURE, when practical men can be induced to take it up, is the means of much useful information being brought out. Setting Grapes is a most important subject, and there is much difference of opinion amongst gardeners as to the best method to pursue. There are those who recommend a very high temperature and a comparatively dry atmosphere during the whole period of flowering; others recommend a much lower temperature, and syringing the Grapes when in flower. During the past season a very successful exhibitor of Muscats at the London exhibitions, and who exhibits Muscats in a high state of perfection at the summer shows, told me that it was his constant practice to syringe his Muscats when in flower; and if Muscats can be set in a low temperature of from 65° to 70°, with the accompaniment of a somewhat moist atmosphere, simply by syringing, or rather dousing the bunches when in flower, it must be better for the constitution of the Vines than a dry overheated atmosphere of 75° at night and 85° by day during dull, cold weather.

There is an early house here planted with Black Hamburgh, Buckland Sweetwater, and White Frontignan. The last two varieties never set well in a rather moist atmosphere of from 60° to 65°, but in the past and present season I allowed no water in the evaporating troughs, but damped the walls and pathways twice a-day, and kept up a regular night temperature of 70°, and they set quite as freely as the Hamburghs. The Grapes are now ripening, and in all cases the berries are swelling equally. I treat the Muscats in the same way, but allow the night temperature to range from 70° to 75°; I find the Grapes set well, but the high night temperature without the usual amount of moisture is conducive to the development of red spider, and if that invincible enemy of the Vine gains much headway at this early stage there is only a poor chance of well-finished Grapes being produced. I have little faith in the system of allowing the shoots to grow up towards the glass as being an unfailing remedy. I find with pot Vines that the bunches nearest the ground set quite as freely as those on shoots allowed to ramble upwards.

I believe the first point is to have the roots in an active healthy state and under command; the next point is the requisite degree of temperature and of atmospheric moisture. On the latter point, as I have already stated, opinions differ widely, and a few remarks on this subject from successful cultivators would be of great value to those who have not had an extensive experience. We have Mr. W. Thomson's system in his book on the Vine in a concise form, but if those who have been equally successful with a different method would state their mode of proceeding, it would be space well occupied in your Journal.—J. DOUGLAS.

THE CLIMATE OF SUSSEX.

In the garden of F. Ellman, Esq., of Battle, there is a *Camellia* growing on a lawn in the open air, the circumference of which is 40 feet, and the height between 8 and 9 feet. It was in bloom on Christmas-day last, and judging from a photograph of it now before us, which was taken on the 20th of February, it may be said to have been in a profusion of bloom then; thus producing during the dreariest months of the year a cheering and a charming effect. Mr. Ellman informs us that it has stood all weathers for forty-nine or fifty years in its present position, the blossoms numbering thousands each season. This is encouraging to lovers of horticulture in Sussex; and when, in addition, we know of open-air Figs being produced in abundance there also, it says much for the climate of that district. We ourselves, after the experience of a quarter of a century on the Weald of the same county, can testify to the remarkable immunity plants enjoy from severe frosts, while those of the same species have been completely destroyed in what would seem to be more highly-favoured situations. During the period referred to there have been two or three intense frosts that have spread havoc over the face of almost all England. That of Christmas-day, 1860, surpassed anything of the kind on record in its effects on vegetation. It left in some places neither tree nor shrub. Evergreens of great age

were killed to the roots. Not a Mexican Conifer was left in a condition which its owner cared to preserve. Handsome trees of that handiwork of Conifers, *Pinus insignis*, were swept away. Even the Oaks of Sherwood Forest were heard to shiver aloud; and their aged bark was rent with a report which those who heard it compared to the report of musketry. But the effect on the vegetation of the Weald of Sussex was far otherwise. To this day we have Mexican Conifers hale and luxuriant which passed that dreadful ordeal with their leaves but slightly browned; and *Pinus insignis*, now upwards of 40 feet high, was left perfectly uninjured, while Laurels, Bays, Portugal Laurels, *Laurostictus*, and *Aucubas*, which in other places were destroyed, escaped without any damage beyond the browning of their foliage.

THE APPLE AS AN ORCHARD FRUIT.

MR. PEARSON'S able article on the Dess Pool Apple (see page 26), will, I hope, induce others to come forward and speak of the merits and demerits of varieties of fruit which, however useful and good, are only known in one district. Although I believe the Apple just named has a wider range of culture, yet from all I can learn it does not seem to be much grown in this district, where no inconsiderable proportion of the land in cultivation consists of orchards. But my purpose is not to ask for further information respecting it, for Mr. Pearson's remarks will certainly go further to condemn it than the mere production of a high-coloured sample in a favourable season will do to secure it favour in the eyes of the long-headed, close-observing class of fruit-growers who supply London and the other great markets in the kingdom with the bulk of the fruit that is consumed. There is no question that a fine highly-coloured dish of fruit may captivate some less-experienced growers in a similar way that glitter and gay colours in other things receive more than their meed of attention. Whether this Apple is over- or under-praised is not what I would now ask; I simply call the attention of such experienced fruit-growers as Mr. Pearson to the general principles of their calling, and ask them to discuss in a temperate manner one or two of the ideas put forth in other quarters on the growth of the Apple and other fruits, with regard to obtaining the greatest amount of good fruit at the least cost; or, in certain cases, let us lay aside the matter of cost altogether, and say in what manner the best fruit is obtained. The latter view of the matter ought, however, not to be confounded with the former, which is by far the more important; but where some especial treatment has resulted in fruit of very superior quality being produced, any communication bearing on this will be in the highest degree instructive.

In districts where the Apple is extensively grown it is fair to suppose that amongst the many whose living depends on its well-doing there are those who closely attend to its cultivation, watch its progress, and are ever on the alert to gain further knowledge of its management, whether imparted by books, the agency of other fruit-growers, or the still more efficient mode of judging for themselves. Fruit-growing cannot be learned in half-a-dozen years, and the idea entertained at the end of that period may be reversed at the termination of the next six years: hence, as a general rule, the opinions of the old and experienced in such matters are those to be depended on; for experiments with fruit trees are not so satisfactorily proved in a short time as to justify a decisive opinion. Some experiments, however, have been carried on a sufficient length of time to enable a fair conclusion to be arrived at, and may with propriety be adverted to here, still confining my observations to the Apple.

It is very probable that ever since the cultivation of this fruit began amongst us some mode of pruning the tree has been adopted; and in many cases pruning was a necessity, for the tree either became too large for its place, or in some other way encroached on something else, and had to be cut back. In other cases a tree might be planted against a wall, and entangling and training would by degrees work themselves into an established plan, and ultimately trees trained in some fanciful form became the hobby of those who might think that a cluster of fruit in one place was better than the same scattered over several branches. Varied in every conceivable way were the modes adopted to induce the tree to take the desired shape, but the mode of bearing fruit was the same in all cases, and, in fact, is the same now in the more recent form the tree is obliged to take; spurs of various lengths, and pruned with more or less severity, being the parts on which the fruit has been produced. It has often occurred to me that a much

more important object might be gained by pointing out the right way to treat these spurs than by discussing the mode of training the stems and branches, for I never could discover any particular difference in the bearing qualities of a branch whether grown in a straight or curved direction. Perhaps there was a difference between a vertical and a horizontal branch, but in general some modification of the latter is adopted in all fancy training, and I have often wondered in what the difference consisted between the two modes of training called cordon and espalier, excepting in name, when both are merely horizontal branches clothed with what are expected to be fruit-bearing spurs. If there is any difference, it would seem that the newer form is more contracted, and of course not so fruitful. Training, however, has always been a favourite pursuit of the amateur, and the change in the fashion in that respect need not be wondered at. Whether every change is an advantage or not, is a question that might be asked with propriety of those who assume to teach us the form an Apple tree ought to take. The future, in all probability, will condemn much that is done now, and while fashion tyrannises over us we ought to exercise a charitable feeling to others. A Chinese mandarin has as much reason on his side for admiring the distorted little foot of his lady love as the English gentleman has for being proud of the miniature Apple tree he has confined in a pot, or in some way dwarfed into the smallest proportions compatible with its bearing fruit. The analogy between the two cases is more striking than may at first sight appear, and other instances might be given. Let us not too hastily condemn those modes of training for the adoption of which there are good reasons. On the other hand, let every mode of growing good fruit be fairly represented, and the result of each fairly pointed out.

Amongst the earliest modes of training the Apple tree that I have any knowledge of from personal inspection (setting aside wall and espalier training), is a mode not yet extinct, and of which the first specimen I remember seeing must have been formed before the commencement of the present century, and for anything I know to the contrary, the plan might have been followed a century earlier. It is simply to take a dwarf tree, say with a stem 1 foot high, cut out the centre of the tree, and tie in all the branches to a hoop a little way up, so as to form a sort of skeleton like that of an inverted umbrella without the handle. These branches are shortened and multiplied, so as seldom to exceed a height of 8 feet, and a diameter at the top of about the same dimensions. Spurs more or less fruitful, and, I may observe, more or less ugly (in winter certainly so), stud the sides of these branches, and every year the tree undergoes one or more prunings. Very good fruit is often obtained in this way, and in places where it is important not to interfere with the view of some distant place, this mode may have its advocates, but fewer trees are met with thus managed than thirty or more years ago.

Another mode of training, partly a modification of the last, is to start the tree in the same manner, but instead of shortening the branches to rather encourage them upwards, and remove most of the lateral branches, excepting natural spurs. The leaders only were shortened when necessary, and the centre of the tree kept open and hollow, so that the sun could shine on the north side of the tree as well as on the south, by its rays penetrating the centre. I remember one of the prettiest orchards of trees of this kind that I think I ever saw, just coming into full bearing. The trees were eight or ten years old and in robust health, when, with those in many other orchards in the same neighbourhood, they were struck with blight, and not a single leaf was to be seen on the whole orchard of several acres on the 1st of July. This was, I think, in 1856, but I may be mistaken a year. The trees were all King Pippin, a popular kind at that time. They recovered, but have never presented the robust healthy character they did before, but at the time I mention other trees suffered in a like manner. The evil must not be ascribed to the mode of training, which is much to be admired when the ground is retained in tillage, but when it is laid down in grass it is not so convenient.

Where a few very fine fruit are required for some special purpose, as for exhibition, I believe there is no better mode of obtaining them than on young healthy trees trained espalier fashion. I do not affirm that they would not be as good on a wall with a favourable aspect, but such walls are generally wanted for other kinds of fruit, and I mention the espalier as being the next best mode of securing good specimens of fruit. In giving this opinion, size and appearance are the qualities

supposed to be expected, for I am not sure that the flavour is any better than, if so good as, that of fruit from trees grown in a more natural way. As the latter, however, are exposed to high winds and other casualties which often bruise or blow off the best samples of fruit, I have recommended the espalier, as being more safe. A neatly-trained espalier tree is also an ornament to a garden; but it is often made to serve another purpose as well—namely, to act as a screen to conceal unsightly objects. Without, however, giving any further opinion on the merits of this mode of growing fruit than as regards the quantity and quality of the produce, I fear the former must not be looked into very closely, but the latter, where the trees are healthy and other things favourable, will bear investigation as well as that of fruit grown in any other way.

On the many fanciful forms the Apple tree has been twisted into, it is not my purpose here to enter, further than to give a mere glance at one or two prominent ones. First amongst them I may mention the arched trellis and the table trellis, as the late Mr. Errington used to designate it. The merits and demerits of both were somewhat alike, being the full exposure to sun of the fruit at top, and the full exposure to frost and other enemies to the blossom in spring. Certainly the character of the training gives good opportunities for using some protecting material, and when trouble and expense are not cared for, the plan might be recommendable. The arched trellis, when enclosing a walk, is often an object of beauty and of utility as well, but I am not certain of ever having seen better fruit obtained from them than from the ordinary espalier, and very often healthy ordinary standards yield as good fruit as either. Another fanciful mode I once had the management of, was to train the Apple-tree branches spirally round a sort of iron cage of a cylindrical shape. As objects of mere fancy, I used to think the trees looked better than those trained in other fanciful forms, especially in winter, and they bore neither better nor worse, as far as I could judge, than others pruned on the artificial spur system, and which, when long continued, gives a branch a miniature pollard-headed character; the fruit so produced, however large, fills the basket but slowly, and is inferior in flavour to that borne on standards, and, therefore, more fully exposed to the sun and air.

The pyramidal training of the Apple does not appear to be so successful as that of the Pear, the natural form of the Apple tree being unfavourable, but I believe some good examples of this mode of training are to be met with; still, in the cases where they exist, it may be supposed that a very good result might also have been obtained had a more natural mode been adopted. A favourable situation, assisted by a good season, will usually insure a successful result. The proper question to ask is, Whether the same result might not have been attained in a more simple and economical manner? and if this can be proved to be the case, the advocates of any particular mode of training may be asked to put their case in some statistical form, so as to show what advantage a great amount of labour and attention has on its side, if a like result can be attained with half that labour and attention. Where these become pleasure it is needless to push the question; but, in general, people do not take things in that light, and if a bushel of Apples can be had from a large tree for a certain sum as good as the same can be had at a greater cost from some peculiarly-trained small tree, they will naturally ask, What is the use of all the stopping, pruning, and the like?

If I were asked my opinion of what most nearly approached perfection in an orchard of Apple trees, bearing in mind the requirement of a fair remuneration to the producer, I would point to some of the many good examples of standard trees on grass—not that they have always been surrounded by grass, but, on the contrary, they have been reared on tilled ground, but as the trees attained a proper size the ground was laid down in grass. Examples of this mode of culture are plentiful enough, and so are some decrepit trees as well. In one of the best orchards of this kind, fruit may often be seen produced by hundreds of bushels; and if we were to look through Covent Garden Market and trace the best samples of Apples met with there to the places they came from, these would most likely be found to be orchards of this description. I have no hesitation in saying that in my opinion the mode of cultivation referred to has a decided advantage over all others in providing Apples for the million, and not unfrequently the best dishes gracing an exhibition table are furnished by trees so treated. And why should it not be so? The Apple, if not a native fruit, is certainly an improved form of the wild Crab found amongst us, and the natural form of the Crab tree is a fair example of that

of the Apple, and that form in no respect resembles the ludicrous shapes the tree is forced to assume. An expanded head on a stem more or less elongated—such is the Apple tree in general, some varieties being more upright than others.

As I find my remarks have extended to a greater length than I anticipated, I must defer those on the Apple as a standard tree till another time, hoping, nevertheless, that those who have been very successful in obtaining good crops of fruit from trees trained in some of the miniature forms recommended by persons who have seen such trees growing abroad, will report their practice. If they have been able to attain results at a less cost than has been accomplished in the ordinary way by the large trees met with in so many places, I for one shall be glad to follow so good an example.—J. ROBSON.

IS THE POTATO DISEASE HEREDITARY?

I PLANTED in 1865 some Pink Kidney Potatoes of a late-keeping kind, called here Yorkshire Kidneys. They produce much haulm, and are a little given to disease. The crop was diseased. I selected from the diseased Potatoes twelve of the very worst—so bad, so rotten, as scarcely to have any vitality, and planted them in March 1866, on a piece of poor ground without any manure. The result was seventy-one Potatoes quite sound, and fifteen diseased. In 1867 I planted the diseased Potatoes and a few sound ones, sufficient to make a long row; the result was scarcely any disease at all. In 1868 I planted two rows, taking all the diseased and small Potatoes, the result was a good crop and no disease.

To day (April 21st), I have looked over the Potatoes left, about half a bushel, and cannot find a trace of disease.

I have this year planted one row of large, sound, Potatoes, and will in due time give you the result.—W. KERS, *Augmering, Arundel*.

SUMMER GALES.

THERE is little, if anything, either of novelty or originality in the following remarks as to the manner in which injury is inflicted upon flowering plants in summer by the action of violent gales of wind; nevertheless, it may not be ill-timed to call attention to the subject.

We seldom neglect to shelter out-door plants from frost and snow during winter, or from hail storms in the spring; but, we are not always efficiently careful in guarding against the tempestuous weather which is not unusual in many localities about the period of the summer solstice. That this kind of weather was reckoned upon in former days, as well as now, may be inferred from the following deprecatory proverb:—

"No tempest good July,
Lest corn come off blue by!"

The precise meaning of the phrase *blue by* is rather obscure, but it signifies most likely some kind of blight; and, it is well known that corn is very liable to injury when the plant is in bloom, that side of the ear exposed to the wind being principally affected.

Some months ago, one of your correspondents very properly urged the expediency of tying Rose shoots securely, in order to preserve them from "the furious assaults of the south-west wind;" another gentleman, however, failing to adopt protective measures, had to lament the total destruction of his ornamental bedding plants owing to the effects of a severe gale in the month of July. A plant has been aptly defined to be "a living body that has no power of motion except when acted upon by external force;" the action of wind, therefore, according to its force or direction, is calculated to affect it either beneficially or injuriously. The benefit accruing from gentle breezes is obvious; they are essential to the healthful performance of all the functions of a plant by keeping its leaves in constant motion so as to vary their surfaces, and thus expose each in turn to the salutary influence of solar light. Far otherwise is it, however, if a plant be assaulted by boisterous winds, when heavily laden with foliage, and consequently in a state most of all susceptible of vital injury. The nature of the injury inflicted under such circumstances is, in the first place, mechanical. For instance, when the stem of a plant is swayed extensively to and fro, the root becomes loosened from its hold, its spongelets are more or less torn asunder; the branches are broken off, and the leaves bruised and lacerated. The rupture of the spongelets, which readily occurs, as they are exceedingly delicate, impairs their action as absorbing and feeding organs,

so that circulation throughout the vessels of the stem and branches becomes enfeebled, and the supply of fluid required by the leaves for the performance of their various offices is in a great measure diminished. In the next place, fracture of the branches entails exudation of sap from their wounded surfaces; and lastly, the confusion and abrasion of the leaves interferes with the processes of respiration and exhalation, checking, if not preventing, the decomposition and assimilation of elements, liquid as well as gaseous, derivable from the atmosphere and other sources.

From this enumeration of what takes place in extreme cases it would appear that the causes of mischief to vegetable organisation from strong currents of air are threefold—that is to say, mechanical, physiological, and chemical. As the mechanical is evidently the proximate cause of all the evil that ensues, the most rational proceeding, on the principle of the adage "a stitch in time," will be that of staking, or otherwise securing the stem so as to prevent undue oscillation. It must not be lost sight of, that when once the spongelets are seriously injured mischief will be progressive without much chance of its being arrested.

Now, the question naturally arises, Is there any rule to guide us as to the proper time for adopting preventive measures? The answer to this question may be briefly stated as follows:—Watch attentively the signs of the weather, when your plants are sufficiently advanced in growth to suffer from excessive motion, and also consult the barometer frequently. If a rapid fall of the quicksilver take place whilst the wind shows a tendency to back against the course of the sun, lose no time in staking and fastening your plants, for the signs just mentioned indicate a gale more or less violent from some point of the compass. Forecasts of weather for more than two or three days are well known to be illusory, but within this range the indications above mentioned may be depended upon. In order to impress this fact upon the mind, it may be allowable thus to imitate one of the favourite distichs of the late Admiral Fitzroy:—

"When the wind backs, and the weather-glass falls,
Then, be on your guard against gales and squalls."

In regard to precautionary measures, none seem likely to answer better than those adopted last August by the Rev. T. C. Bréhaud, for the preservation of his crop of Indian Maize. He placed stakes at each end of the row, with cords of spun yarn interlacing the plants, and "With this protection," he informs us, "my beautiful plants bent their heads without the least injury before squalls of 30 lbs. to the square foot."

It may be stated, in conclusion, that for purposes of staking and interlacing, the galvanised iron uprights with prongs, used for wire fencing, are well adapted, strands of spun yarn instead of wire being passed through the holes with which they are pierced. These pillars, being very durable, are available for other purposes at all seasons; and as they occupy but little space, when out of use they are conveniently stowed away.—S. ELLIOTT HOSKINS.

CATS VERSUS NEMOPHILA INSIGNIS.

HAVE you ever noticed the partiality of the feline race for this pretty sky-blue annual? Our hardy annuals are now well above the ground, and I am sorry to say our garden is not cat-proof; consequently these animals have commenced their old game. They scratch it up, and eat it (I wish it were poison), and roll in it like donkeys, and they not only spoil the clump of the flowers in question, but a good part of the bed round it. I have stuck pieces of glass amongst it, but they seem to enjoy it all the more. Can you suggest anything to prevent the nuisance? The river is very convenient at the bottom of the garden, and I have already disposed of four of the pests by tying a brick round their neck and throwing them in; but some neighbours have come next door, and, "horror of horrors," brought three cats and a fabulous number of dogs with them. There are ten houses in the row, and each is the home of at least two cats, and I believe three have three a-piece. If this is not enough to send one mad, what is? The more I dispose of them the faster they come; and as to the midnight serenades, I will only say they are something enchanting.—A DISCONSOLATE VICTIM.

[Gray puts the question, "What cat's avers to fish?" and we have heard that the whole race are frantic after the roots of Valerian, but we never before heard that they are monomaniacs in their love for *Nemophila insignis*. Bits of meat powdered

with strychnine placed near the plants would sweep off the feline Vandals; but you might protect your flowers, and spare your neighbours' pets by bending over the *Nemophilas* an arch of galvanised iron net.—EDS.]

TENDER ANNUALS.—No. 2.

COCKSCOMB (*Celosia cristata*).—The best variety of this is the Dwarf Crimson. There are several other dwarf varieties of different shades of colour from crimson to sulphur. The tall varieties are not now grown, and I think it well, as they are anything but desirable; for a Cockscomb should have a short stem, no higher than sufficient to bear the comb firmly, and when full-sized the two lower points of the comb will be on a level with the rim of the pot, and the comb itself should represent the half of a circle.

To have good Cockscombs good seed must be sown, and that is difficult to procure. To keep them from becoming "leggy," it is well to have seeds a few years old, as such do not grow so strongly, and the combs are in general larger and better formed than those from new seed, which grow too much to leaf.

The seed should be sown not later than May, but I like to sow twice—once in March, and again in April. Rich light soil is best for sowing; scatter the seeds rather thinly in well-drained pots and in fine soil, and cover them lightly. After sowing place the pots in a hotbed where there is a temperature of from 65° to 70° at night, and of 75° by day, with a rise from sun heat. The pots should be plunged to the rim in a hotbed, and when the plants appear they should be kept near the glass, the nearer the better, so long as they do not touch it; but it is well to give them the benefit of a hotbed and bottom heat, for a time at least, until they are of a size fit to handle, when they should be potted-off singly in pots from 2½ to 3 inches in diameter, selecting those plants only that are the stiffest and have the leaves in a cluster, or the joints not far apart; indeed, the more dwarf, and the nearer the leaves are together, the better. In potting, the plants should be placed up to the seed leaves in the soil, and it is well to preserve all the roots possible by lifting them carefully with a flattened piece of wood.

After potting replace the plants in the hotbed, and keep them close and moist for a few days until they are established, and then admit air freely, avoiding cold currents, and place them near the glass, for no amount of after-care will make a handsome plant of one which is drawn up weakly in its early stages. When the pots are filled with roots, if the plants are stiff, and have short stems, with the leaves of a good size, and closely studded on the stem or clustered at the top, they may be shifted into 4½-pots, sinking them a little, but not more than an inch or so, unless the plants are tall, when the lower leaves should be rubbed off the stem to a height of 1½ or 2 inches a few days before potting, and to that distance the plants may be sunk in the soil at the time of potting. They will produce roots from their stems at the parts from which the leaves were removed, and their vigour will be increased as well as their appearance improved. They should be placed in a hotbed or house having a brisk heat of from 60° to 65° at night, and from 70° to 75° by day, with a rise from sun heat to 85° or 90°, assigning them a position near the glass, best on a shelf where they will have an abundance of light and air to keep them from becoming drawn. They should not be further from the glass than 6 inches, and between them and the glass no climber or other plant must intervene. They will need to be turned round occasionally, so as to keep the stems straight. Let the plants be well supplied with water, but do not give any until the soil becomes dry, but before the foliage flags, and then enough to show itself at the drainage. The plants may be sprinkled overhead twice a-day, morning and evening, and the paths, walls, and other surfaces syringed twice or thrice a-day, so as to maintain a moist atmosphere, which last is to be continued until the crowns or combs are full-sized, but the sprinkling overhead must be discontinued when the combs are showing flower, as it is apt to discolour them.

It is well to keep the plants in small pots until the combs show, as it tends to dwarf them, and the best plants can be selected, those being chosen that have a wide comb—that is, those measuring most across and having the comb entire, as a split comb is an irremediable defect. The comb should have a good supply of leaves, and have the points considerably lower than the centre, rejecting plants with crooked and straight

or flat combs. The plants should be potted in 6-inch pots, sinking them in the pots 1 or 2 inches deeper than they were before, and removing the leaves to that extent from the stem a few days prior to potting; and when these pots are full of roots the plants may be shifted into 8-inch pots, which are quite large enough, and for decorative purposes 6-inch pots answer tolerably well, and are in some cases desirable. At the last shifting the plants should be sunk deeper in the soil, but not deeper than 1 or 2 inches, and in no case so as to bring the flattened portion of the stem too near the soil; indeed, the plant ought to have 6 inches of clear stem, and more than half of it round, not thin and flat. At the last potting the drainage must be good, and the shift ought to be given before the combs are showing clear of the leaves.

The compost best suited to the Cockscomb is as follows:—The top 1½ inch of a pasturo, where the soil is a good rich loam, neither heavy nor light, but inclined to the latter, should be laid up for six months, and previous to use torn in pieces with the hand, and made rather fine, but not sifted; to this add a fourth part of old cow dung or well-rotted and rather dry hotbed manure, and about one-sixth of silver sand, well mixing the whole. In potting, the soil should be pressed rather firmly, but not very tightly, so that the water may pass freely through it, and yet it should not be very open, as the plants are apt to run too much to leaf when the soil is loose, and the sides of the ball if very closely matted should be loosened by scratching with the point of a label, or other pointed piece of wood, before potting.

When the pots, after the last shift, become filled with roots manure-water may be applied at every alternate watering. A good liquid manure is formed of one peck of sheep's droppings in thirty gallons of water, well stirred up; or two pecks of fresh cow dung to the same quantity of water may be used instead. In no case ought the soil to be kept in a saturated condition, but the plants are to be well supplied with water, the soil being dry before any is given.

After the weather becomes hot and dry no place is so good as a cold pit, which may be kept sufficiently warm by giving a moderate amount of air and shutting up early in the afternoon, after sprinkling every available surface with water; best if the water is from a tub in which one peck of soot has been mixed with thirty gallons of water. Keep the plants near the glass, which is essential, and not less so is a moist atmosphere without wetting the combs so as to produce discoloration; and too much light cannot be afforded. Shade is destructive of colour, and only tends to cause lanky growth.

When the comb is so far advanced we must trim. All Cockscomb-growers know that the true flowers are produced on the sides of the combs. Now, these flowers must be carefully cut away, as they appear, with a pair of scissors—nothing is so good as Grape scissors—and it must be done neatly, the object being to give the comb a trim appearance, increase its size, and keep it longer an attractive object. Clip off every appearance of flower on the sides of the comb, both sides alike, and on no account allow seed to mature. The plant will then produce a finer comb, and of considerably larger size than one not so trimmed.

To secure seed a few plants must be allowed to flower, but for that end it is well to thin the flowers and allow the finest only to mature seed, always saving it from the best-shaped combs, shape being preferred to size, though the latter is an object. Good Cockscomb seed is scarce, at least latterly the plants I have generally seen were neither so well grown, nor had such fine, wide, well-formed combs as I have seen many years ago; one-half of them having feathered, and torn, flat, and crooked combs.—G. ABBEY.

MISS WATSON TRICOLOR PELARGONIUM.

HAVING recently paid a visit to Mr. Watson's New Zealand Nurseries, at St. Alban's, I was struck with the magnificent display of Tricolor Pelargoniums. The variety which is to be most admired is Miss Watson, for without doubt it is a gem. To my great astonishment, in looking through notes subscribed by your worthy correspondent "D., Deal," I find it pronounced to have been considerably overrated, and not worthy of the praise which has been bestowed upon it. If "D., Deal," should chance to be within twenty or thirty miles of the locality in which these Pelargoniums are brilliantly displayed in such numbers, he would not think his time lost if he were to call and take a glimpse of them, and probably his opinion of Miss

Watson would be more favourable than it appeared to be from his remarks.—H. B.

GROWING ONIONS FOR COMPETITION.

Sow them in a forcing pit or hot frame about the beginning of February. About six weeks thereafter place them in 3-inch pots—one in each pot—filled with rotten turf and leaf mould—two parts of the turf to one of the mould; and grow them on in heat until about the end of April; then transfer them to a cold frame, and keep it close for the first three days, except during sunshin, when the higher ends of the sashes ought to be raised 1 or 2 inches, according to the heat of the sun. Shut the frame about four o'clock, so as to husband the heat, and thus a higher temperature will be kept up in it during the night. After the first three days, the weather being favourable, open the frame half an hour earlier every day, and close half an hour later. The sashes should at the same time be raised a little higher every day until they are removed altogether; this may be accomplished in ordinary weather in the course of ten or twelve days, when the plants may be put out into a sheltered place, prepared in the following manner:—

In autumn take out a trench, say 8 inches deep and 9 inches wide, or thereby, then raise the subsoil with a pick 12 or 14 inches deep to carry off the superfluous water. This being done, place the soil to be taken from the next trench on the top of the subsoil so raised. Continue to proceed in this way, raising the subsoil and turning the surface on the top of it until you have the quantity of ground required, then level the ground and remove the whole surface 1 inch deep, and place thereon a coating, 1 inch thick, of pure nightsoil, or should such manure not be available, 2 inches of rotten cow, horse, or pig's dung may be used; after which spread the soil taken from the surface over the top of the manure. When thus prepared, give the whole a coating of strong salt in the proportion of 1 lb. of salt to 4 square yards. A little leaf mould or rotten turf pointed into the ground immediately before planting would be useful in starting and rooting the plants. However, care must be taken, while this is being done, not to allow the manure to be buried too deep by the digging; nevertheless, it should be thoroughly mixed with the soil near the surface. Dung buried only 2 or 3 inches deep will produce a much better crop of Onions than if it were buried 8 or 10 inches. Many may be disinclined to believe this, but they have only to make one fair trial to become convinced. Every horticulturist and agriculturist knows well that the roots of plants grow towards the manure; consequently, if the manure is deep, the roots of the plants will be deep also, and will in that way, to a very great extent, lose the benefit of the influence of the heat of the sun. On the other hand, when the dung is near to the top, the roots will not be far from it; and thus the plants will have all the advantages derived from the manure, as well as those from the heat and gases of the atmosphere, so essential to the growth of the plant.

In planting out the Onions, knock them out of the pots, taking care not to break the balls. Plant them in rows, at least 14 inches apart and 9 inches between each plant, placing the under side of the heads of the Onions on a level with the surface; then put a stake to each of them, and draw up the earth with a hoe on each side of the rows, and thus form ridges for the Onions to grow in. When the heads begin to develop, the ridges may be levelled and the stakes removed; then give another coating of salt in the proportion of half a pound to 4 square yards. In dry weather give them a good watering at least once a week. The water may be mixed with old urine in the proportion of one of urine to ten of water. In moist weather one of urine to five of water may safely be used. When urine is not to be had, a quarter of a pound of the best guano may be sown every three weeks, on a wet day, over 6 square yards of ground, prepared as aforesaid. In the absence of rain, use the watering-can with the rose on, so as to clean the plants of the guano, and wash a portion of it into the soil. Some prefer using the guano in a liquid state, but I have always been most successful with it when used in the way of top-dressing. Those who have not prepared their Onion ground in the autumn can do so in February in the way recommended, taking care to use no manure but that which is thoroughly rotten; and instead of using 1 lb. of salt to 4 square yards, use only half that quantity.

In proof of the advantages of growing Onions in the way referred to, I may mention that I grew one Onion of the Santa Anna Madeira variety to the weight of 1 lb. 14 ozs., and that a few of the same variety were shown by the writer in a collec-

tion of vegetables at the last autumn show in Glasgow, which measured upwards of 15 inches in circumference. The six Onions shown by him which carried off the first prize for weight from the Renfrew Show were of the same sort, and weighed 9 lbs. Those that carried off the prizes from the Glasgow Show in September last were raised in heat and afterwards transplanted, the varieties being Nancham Park, Blood Red, and Danvers' Yellow.—JAMES DOBBIN, *Renfrew (The Gardener.)*

ROYAL BOTANIC SOCIETY'S SECOND SPRING SHOW.

THE second spring Show of this Society was held on the 27th and 28th inst., and was far in advance of its predecessor, both as to the number and the quality of the plants exhibited, although these were not displayed to the best advantage, from being for the most part confined to a long narrow tent, and the rest dispersed in the Conservatory, where there was every chance of their being overlooked.

Roses were the most attractive—the great feature of the Show, and of these Mr. William Paul furnished in his first-prize collection beautiful examples of Paul Ricant, Madame de St. Joseph, Senateur Vaisse, Alba rosea, John Hopper, Pierre Notting, and Baron Adolphe de Rothschild. Messrs. Paul & Son were second with, among others, President, very full of bloom; Madame Willermoz, in beautiful condition; Souvenir d'un Ami, a remarkably fine specimen plant, but the flowers not fully expanded; Princess Mary of Cambridge, blooming very freely, and Mlle. Marie Rady. In the amateurs' class the only exhibitor was Mr. James, who took a first prize. The best three Roses in the class for new kinds came from Mr. William Paul, and were Monsieur Furtado, a beautiful specimen with large delicate yellow flowers; Horace Vernet, rich scarlet shaded with purple; and Antoine Ducher, very fine and full, pink. Messrs. Paul & Son were second with Monsieur Furtado, Madame Margottin, yellowish cream, and Imperatrice Eugénie, bright pink, very pretty when half expanded. Mr. W. Paul also sent a beautiful collection, and Mr. Osman, of Stanmore, cut blooms.

Of Pelargoniums Messrs. Dobson, of Isleworth, had some well-flowered plants for this season of the large-flowering kinds; Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., receiving a third prize for Zonal varieties.

Amarylids were only represented by one collection—that of Mr. Baxter, gardener to C. Keiser, Esq., of Broxbourne, who took the first prize for kinds the best of which were noticed at page 273, and, as there remarked, some of them deficient in form.

Azaleas were represented by some very well-bloomed plants; those from Mr. Turner, of Slough, for the most part the same varieties as those shown at Kensington on the 17th, being first in the nurserymen's class. Mr. Wilkie, Kensington, and Mr. Fairbairn, gardener to the Duke of Northumberland, Sion House, also showed plants in good bloom.

Mixed collections of fine-foliaged and flowering plants afforded a very effective part of the display, the first-prize collections from Mr. Fairbairn and Mr. Wheeler being the most remarkable. The former had magnificent specimens of Anthurium acule and Alocasia zehriana¹ Clivea nobilis, Sobralia macrantha with four lovely flowers, and Vanda suavis. The latter sent a fine plant of Dicksonia antarctica with a thick trunk, and the young fronds springing from the midst of the old ones, forming a conspicuous object at one end of the tent; a remarkably fine plant of Chorozema cordatum some 4 feet in diameter, and Clerodendron Thomsonae. Mr. Wright, gardener to C. H. Roberts, Esq., was second with a very good Eriostemon, a large plant of Pandanus javanicus variegatus, and a fine Croton variegatum; and Mr. Wilkie third.

For Exotic Ferns, prizes were awarded to Messrs. Wright, Wilkie, and Wheeler. There were in their collections good examples of Cibotium Schiedei, Adiantum cuneatum, the Bird's-nest Fern, Lomaria gibba, and others.

Auriculas were also exhibited at this Show. The best came from Mr. Turner, who had Col. Champneys (Turner), Mrs. Smith (Smith), Countess of Dunmore (Lightbody), Sophia (Chapman), Competitor (Turner), Miss Brightly (Spalding). In the amateurs' class Mr. Butcher, of Camberwell, was first; Mr. James, Isleworth, second. The former received a first-class certificate for Mrs. Butcher, which has been noticed in previous reports, and Mr. Turner, who had a second prize for a collection of Alpines, mostly the same as shown at the last Floral Committee meeting at Kensington, received similar awards for two of these—viz., Constellation and Brunette.

Of miscellaneous subjects a considerable number was shown, and for them several prizes were awarded. Mr. Williams, of Holloway, had a first prize for an excellent collection of fine-foliaged and flowering plants, including several Orchids, and a first-class certificate for Miltonia virginialis. Mr. W. Paul sent fine basketful of Platanus, Red Admiral, and other beautiful leaved Pelargoniums; also Blue Bell, fine deep rose with a slight bluish shade, especially noticeable when the flowers were between the light and the eye. Mr. Paul likewise had some fine unnamed seedlings, one of which had a very broad and beautiful zone, very pleasing, too, in colour. Messrs. Carter and Co. also largely contributed Pelargoniums of the same class, some

seedlings, and others which have been before exhibited and are about to be sent out. Of the former, Princess of Wales and Mrs. Tom Hood, had very bold foliage with highly coloured zones; of the latter, Sir R. Napier, Mrs. Duunett, and Southern Belle were very effective. The same firm sent also a large basket of *Primula cortusoides amana* in fine bloom and high in colour. Mr. Turner, of Slough, had his pretty white-variegated May Queen, and Mlle. Christine Nilsson.

Mr. Kimberley sent *Zonit Pelargonium* and *Cinerarias*; Messrs. Cutbush, Azalea; Messrs. Reeves, Lily of the Valley; Mr. James, hardy Ferns, Pansies, and Calceolarias; Mr. Wilkie, *Spiraea barbatia*; Mr. Bragg, collections of Pansies; Messrs. Dobson & Son, *Cinerarias*; and Mr. Fairbairn, a hanging basket of *Bigonia venusta*, profusely hung with dense clusters of its orange flowers. Several extra prizes were awarded to the exhibitors of the above subjects.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ALLAMANDA NOBILIS (Noble Allamanda). *Nat. Ord.*, Apocynaceæ. *Lim.*, Pentandria Monogynia.—A magnificent shrub from the Rio Branco, on the confines of Brazil and Venezuela. Flowers yellow, and 5½ inches in diameter.—(*Bot. Mag.*, t. 5764.)

RICHARDIA MELANOLLEUCA (Black-throated Richardia). *Nat. Ord.*, Arecidæ. *Lim.*, Monœcia Monandria.—Native of South Africa. Flower straw-coloured, with dark purple spot at its base.—(*Ibid.* t., 5765.)

DENDROBIUM CRASSINODE (Thick-knotted Dendrobe). *Nat. Ord.*, Orchidaceæ. *Lim.*, Gynandria Monandria.—Native of the Siamese provinces of Kiong-koung. Flowers white, tipped with lilac.—(*Ibid.* t., 5766.)

SACCOLABIUM BIGIBRUM (Orange-flowered Saccolabe). *Nat. Ord.*, Orchidaceæ. *Lim.*, Gynandria Monandria.—Native of Rangoon or Arracan. Flowers orange.—(*Ibid.* t., 5767.)

PALAVA FLEXUOSA (Flexuose-stemmed Palava). *Nat. Ord.*, Malvaceæ. *Lim.*, Monadelphina Polygynia.—A half-hardy annual, native of the San Lorenzo valley in Peru. Flowers light mauve, white at the base, with a dark intermediate band.—(*Ibid.* t., 5768.)

TOMATOES—Ornamental Varieties.—"Grown in pots, the Tomato makes a very handsome decorative plant, the Cherry, Plum, and other small-fruited sorts especially so.

"The *Feejee Island Tomato*, remarkable amongst the larger sorts for its decided crimson colour, and for the slightly marked ribs which occur near the base of its fruits. The *Orangefield Tomato*, which is the same as the Large Red Italian, and is a very excellent culinary sort, and remarkably prolific. The *Yellow Plum Tomato*, a strikingly ornamental variety, the fruit of which are about the size and shape of a Damson. The *Pear-formed Tomato*, which is red, and of rather larger size than the Plum-shaped. The *Yellow Cherry Tomato*, whose still smaller spherical yellow fruits, equally with these of the red-fruited form, are produced in great abundance, and have a very attractive appearance. The three latter sorts are especially recommended for the great beauty of the plants, when well-grown, and full of fruit. They may be successfully grown in pots for house decoration, and their quality is quite equal to that of the larger sorts from the utilitarian point of view.

"The *Currant Tomato* is the most ornamental of the whole series. In foliage and general aspect it resembles the ordinary kinds, but it is smaller and more slender, and the fruits grow in long, drooping racemes, of which the basal portion only is shown in our figure. These long racemes of fruit, of a bright red colour, give the plant a very beautiful appearance. Messrs. Vilmorin, by whom it has been distributed under the name of *Solanum (Lycopersicum) racemigerum*, give the following account of it:—"This most ornamental species of Tomato has been received from M. Durieu de Maisonneuve, the learned director of the Bordeaux Botanic Garden. It is a veritable Tomato, the sub-climbing stems of which are very much branched, and bear a profusion of simple or divided racemes from 6 to 8 inches long, composed of from fifteen to twenty-five smooth, round fruits, disposed in two rows, and of a very bright scarlet colour, so as to give them a strong resemblance to clusters of Red Currants."—(*Florist and Pomologist*, 3 s., ii., 73.)

COOL-HOUSE ORCHIDS.—No. 2.

It will be admitted by most Orchid-growers that vinerias started either in January or February are best suited for the successful culture of Orchids. The Vines should not be very close together, so as to cause gloominess, but ought to extend to the full length of the rafters, so as to afford an agreeable shade throughout the house. I find that a sufficient amount

of shade is given when the Vines are from 3 feet to 3 feet 6 inches apart, and treated on the spur system, though that is immaterial, as they answer equally well for shade when trained on the rod system. When the Vines are nearer together than 3 feet, the shade is so great that the leaves and flower stems have a disposition to grow undesirably long and weak, and from that cause not unfrequently become one-sided.

The house ought to be well ventilated, having not only top but side ventilation, for though cold, drying draughts are to be strictly guarded against, a free circulation of air is very desirable, especially when the plants are making new growths, and it may be in such quantity as to cause the foliage to gently wave about. Cold, dry, cutting winds, such as occur in March, when the growths of the Orchids are young and tender, should be broken by placing over the front openings some hexagon netting, like that used for protecting fruit-tree blossom from frost and the fruit from wasps; but the best material for the purpose is perforated zinc, which may be nailed securely over the openings when the lights admit of such a contrivance. The best means of ventilation is by openings in the front walls; a plate of perforated zinc placed on the inside of the lights or openings will admit of air being given during cold days and nights, especially when the air on entering must pass over the hot-water pipes before it mixes with the air of the house, as it then becomes warmed and more favourable to the health and vigour of the plants. The top lights or ventilators will be less likely to dry and cool the atmosphere suddenly than the front ventilation, and they need not, except in the early part of the season, have anything nailed over them, and then hexagon netting is the best material that I have used, though in towns, where smoke and sooty deposits are plentiful, the openings are best covered with woollen netting, which, by its hairy meshes, collects a large quantity of soot. Orchids cannot have too much air, providing the proper temperature be secured, and air is not more advantageous by day than night, when a moderate quantity should be given, particularly when the growths are being made and perfected. Ventilation, winter and summer, is absolutely necessary in Orchid treatment—air ought to be given in greater or less quantity throughout the year.

The medium for furnishing heat should have such an extent of surface that at no time will the heated surface need to be made very hot to maintain the proper temperature of the house, as it then unduly dries the atmosphere, and is very pernicious to the plants, especially when they are making fresh growth; and if there are evaporation troughs the atmosphere is stewing, saturated at one time, and at another, when the pipes are cooler, not nearly so moist, whereas the necessary moisture should be evaporated at a low temperature, and be constantly given off at as low a temperature as well can be, and never at one exceeding 140°. It is better if the water in the troughs do not exceed 120°.

As to the stages for the plants, it is well if they are of stone or slate, and they should be far enough from the glass to afford room for the flower spikes and leaves of the Orchids without interfering with the foliage and fruit of the Vines. As the plants vary in height the distance from the glass must vary in proportion; 3 feet should be the minimum, and the maximum should not exceed 4 feet 6 inches or 5 feet. In most vinerias erected some years ago there are pits occupying the centre of the house, a walk all round, and front and end shelves of stone, wood, or other material. The pit in these houses is the proper place for the Orchids, and its top should be made quite level with rough gravel, having a finer surface-covering of the same, but sifted or washed. On that the pots may be set, and, unlike placing the pots on sand or tan, the gravel does not choke the drainage, and worms do not easily find their way in. The central bed or stage is the best position; but the front and end shelves will answer, only at the end of March the front and end lights must be covered with hexagon netting, or other thin shading material, so as to break the force of the direct rays of the sun.

In every house, and especially in those for Orchid culture, there should be a cistern or tank for holding water, in order to have always at hand an abundant supply of it at the same temperature as that in which the plants are growing, and it is well when it is rain water, the best of all for watering purposes, and no other should be used for Orchids without being exposed for some time previously to become softened and warmed, when it may answer nearly as well as rain water, preference being always given the latter. Tanks are also very convenient for dipping any plants that are grown in baskets or on blocks of wood. Their only drawback is the moisture evaporated from them in winter, when a dry atmosphere must be main-

tained; but that can be remedied by having a lid made to fit closely, with a trap door to admit a watering-pot, and in summer, when water is most required, the tank may be entirely uncovered.

Another desideratum for vineries in which Orchids or plants are required to be grown, is such a construction of the front lights as will permit of the Vines being kept cool during their period of rest, and of a temperature suitable for the Orchids at that season being maintained. The moveable front lights, described in "Sanders on the Vine," answer perfectly, and by such a contrivance the Vines are not needlessly excited by too much heat, nor the Orchids deprived of the heat necessary to cause a free circulation of air, and to dissipate damp, the great evil in all cool houses in winter in our dull, moist climate.

Any house corresponding to the above description will grow Orchids well, and such are warm greenhouses and conservatories that have the rafters clothed with climbing plants, by which the force of the sun's rays is broken, or, if there are no climbers, from March to September a thin shading material must be employed; but when there are climbers there is this drawback—that the Orchids have not the benefit of the same amount of sun light and sun heat in winter as is afforded them in vineries. Another evil is, that the Orchids are so overshadowed and crowded by other plants that they have no chance to succeed, and, indeed, they require more room than any other plants, and should never be crowded so as to be deprived of light from any direction.

As regards temperature, that will be dependant on the heat given to the Vines, or to the inmates of the greenhouse or conservatory. The house most suitable for Orchid culture is one started early in the year—in January or February—for in it the temperature will for nine months out of the twelve be that of a stove, and it is such houses that I would recommend for Orchid culture, as a greater number of species may be grown in them than in vineries or greenhouses assisted by fire heat in cold and dull periods only. If the Vines are started in January the temperature for the first fortnight should be from 40° to 45° at night, increasing it to 50° by the end of the third week, and 55° by the end of the fifth week, and this should be the night temperature until the Vines are in leaf, when it should be from 55° to 60°, and at that point it should be kept until the Vines are coming into flower, when it should range from 60° to 65° at night, which will be the temperature required until the Grapes are ripe. If the Vines are started in January this will be the case at the end of June, or if in February, in the middle or end of July, and after that no fire heat will be required, except in damp, dull periods to dry up damp and prevent the temperature from falling too low in summer and in autumn. In August the temperature should be 60°, in September 55°, in October and November 50°, and in December it should not fall below 45°. I am here alluding to Orchids requiring a warm temperature, it being presumed that the Vines can be placed in a cooler medium than that of the vinery by a contrivance such as I have already referred to. If, on the other hand, there are no means for keeping the Vines cool, a temperature of from 50° to 55° will be sufficient in September, 50° in October, 45° in November, and in December 45° should not be exceeded from fire heat, and the thermometer should not be lower than 40°, whilst in January and February 40° should be the maximum from fire heat at night, and not more than 45° by day from fire heat, when it is necessary to dry up damp, and it should be accompanied with free ventilation. The latter remarks apply to vineries started in March, and which at no time have any artificial heat, except a little at the commencement, and in cold periods and in winter to keep out frost.

Upon all the temperatures named, 5° of increase should be allowed on dull, cold, and frosty days, 10° or 15° when the weather is mild and yet cloudy, but having occasional clear intervals, and on fine clear days the temperature may be 20° or 25° above that of the night, free ventilation being afforded—indeed, a high day and comparatively low night temperature are essential in the culture of Orchids.

With respect to moisture, it will be such as the Vines require. It is usual to keep up a moist atmosphere for Vines by sprinkling them with water twice or thrice a-day, always having regard to the weather, as in cold weather there is less evaporation, and on that account less sprinkling will be required; for instance, when the weather is mild and dull, and but little fire heat is required, sprinkling once a-day will be sufficient, and that should be in the morning or early in the afternoon, whilst when the weather is bright but cold, twice or thrice a-day will

not be too often to sprinkle the Vines, as well as the paths, floors, and walls. Sprinkling is as necessary then as during milder weather, on account of the greater artificial heat—indeed, the atmosphere should be kept moist, and the Vines sprinkled with water two or three times a-day until they are in leaf. Even then I do not fail to syringe them twice a-day, morning and evening, and to keep the paths wet by frequent syringings until the Grapes change colour for ripening, and even then I keep a considerable amount of moisture in the atmosphere for a fortnight or three weeks by sprinkling the floors and walls, taking care not to wet the Grapes, for fear of disfiguring their bloom; but after that no waterings with the syringe are practised, except it be a light bedewing of the Orchids occasionally, as without that, the growths of some not being matured, the pseudo-bulbs are liable to shrivel. Now this moisture will seem excessive to some who do not practise the syringing of Vines, but who depend upon frequent sprinklings of the paths, &c., and the evaporation troughs, for the atmospheric moisture. I have not, however, observed any bad effects resulting from the syringing, either to the Vines or Orchids, and therefore write according to my experience. Syringing will not in anywise injure the fruit or foliage of the Vine if the house have air early, and the water used be rain or soft water, and of the same temperature as that of the house at the time. Some, however, instead of syringing, drown not only the Vines but the Orchids beneath them, and to Orchids much watering, and especially at the beginning of their growth, is positively injurious—in fact, they should be very carefully watered until they are growing freely and have formed fresh roots, then water freely, but avoid making the compost like a sponge by too frequent and heavy waterings. It will be sufficient if the compost be kept moist, commencing by watering sparingly, increasing the quantity with the growth, and reducing it by degrees when the growth is advancing to maturity; when that is complete, as it will be, if ever, when the Grapes are ripe, give no more water than is necessary to keep the pseudo-bulbs from shrivelling. In winter a dry atmosphere must be maintained.

With regard to air, it should be afforded in greater or less quantity day and night when the plants are growing, but in less quantity by night than even in dull days; on bright days the plants can hardly have too much. Allowing for a little at night, more should be given when the temperature in winter reaches 55°, the night temperature being 45°, and always before the day temperature exceeds the night by 15°; but it is better to give a little air when the increase is 10°, giving more in proportion to the increase of temperature, and reducing the amount of air before there is a reduction from 15° higher than the minimum night temperature. It is better to close the house early, and with a good heat from solar influence, than to allow the temperature to become too low before reducing the ventilation, and have, consequently, to put on more artificial heat to secure the proper night temperature.

The evaporation troughs, if there are any, may be filled with water when the Vines are started, and when the growths are somewhat advanced the troughs should be kept full of 1 lb. guano to twenty gallons of water, allowing them to become dry when the Grapes are colouring.—G. ABBEY.

OUR CONSERVATORY.

"I AM sure of one thing, Kate; as far as Camellia-growing is concerned, our conservatory is a failure," said Aunt Margaret one cold dull day in January, when she had been through the house in the vain hope of finding a few flowers to grace her dining-table.

"I do not think the growth is so much at fault, Aunt," said Kate, "we can have that almost in perfection. We can grow the plants, set the buds, even coax them to the size of large nuts, all ready for opening as it were, but they are powerless to go on. Not for us will they expand into beauty; they drop off just when we think there is a possibility they will open and give some little return for the trouble bestowed; it is not one or two plants that do so, but a habit they have all acquired."

"Oh, yes," said Cousin Walter, "the blooming part is the difficulty—the freemasons' secret, known only to the members; you do not suppose they tell you everything."

"It is very grievous, however," said Cousin Herbert, "to think you have upwards of thirty Camellias big and little, and yet are not able to cut a few blooms in January, nothing even showing colour save a York-and-Lancaster, which is not worth much

at best. There is no disputing the quality of your investment, Kate—so many pounds for green leaves, to say nothing about tobacco paper, and various other wonder-working ingredients.

"And soap too, Herbert, is no small item, I assure you," said Janet; "and as for nail-brushes, they wear out in no time. I am sure, Kate, your management cannot be right."

"It is but a natural result, rather a desirable one," said Aunt Margaret, "when women undertake to do men's work. For myself, I never expected much in the way of success."

"I was always quite sure you would soon tire of it, Kate," said Janet.

"Nothing sooner makes people tire of an undertaking than failure; success is the loadstone which drags us all along," said Uncle Tetley. "But I think if you put on a little more heat they would do better; few things will open bloom in so low a temperature as you keep your house; yesterday when I was in, it was down at 40°. Why, summer flowers would do nothing without more warmth than that."

"But, then," replied Kate, "we do not have such short, damp, foggy days in summer as we have had for the last two months, and I never heard of a country where the heat increased with the darkness. I always thought the inside and outside temperatures should bear some affinity to each other. The Camellias are said to do without heat; down in the south they can grow them better in the open air than we can here under glass."

"Then you must give them too much water," said Uncle Tetley; "I have often heard that was a fruitful source of casting buds, and your fallen buds might be gathered up by cupfuls. It may be that you give them too little, and so they dwindle and die from starvation."

"But how are we to know the happy medium? Is there any rule of weight or measure to go by with safety? and if so, what is it? Will a pint do for some plants, a gallon for others, and a few drops for the next? and will the same quantity do equally well for all plants in the same sized pots, and that, too, under various circumstances? Are not garden writers continually saying, Do not give more water than is absolutely necessary in the winter months? It is not very easy to know just the right time—neither too soon nor too late."

"Oh, some gardeners tell by lifting the pots or sounding them; but then you could not do that unless you waited until the pots were very dry and light," said Walter.

"And some people wait until the plant is sick and cannot hold itself up," said Kate; "and then I suppose they feel quite sure they are not a minute too soon. I wonder if they ever think they are a little too late, or consider the mischief which may follow? for I am sure hardwooded plants cannot betray signs of distress without suffering for a long period."

"Well, I would acquire the proper method of watering," said Walter, "if I devoted a whole month to the purpose; I would measure it out by gills, and make notes as I went along, and not always be working in the dark."

"And the following month your notes would probably be worse than useless—utterly set at naught by the action of sun, wind, or rain. You surely do not think plants require the same amount of water on a rainy day as a sunny one?"

"You are right there, Kate," said Uncle Tetley; "I suppose when the spring sunshine comes we shall have our show of late blooms."

"Yes," said Cousin Herbert, "if we do manage a few flowers it is generally in April or May, when the best growers of such plants pull off all laggard buds, thinking flowers will come another year in greater profusion, or to compel them to be true to their time. I must confess I would do the same; if they would not bloom in the winter months, they should not have the chance in spring."

"And then," said Janet, "they soon fade. Why, the Alba plena you cut me the other day to wear in my hair when I was going to South Field, fell all in fragments, and was lost in the cab, and I did not know until the company looked hard at me, and Uncle Stephen said, 'I suppose, Janet, these leaves are your own cultivating.' My cultivating, indeed! it was a compliment, to be sure! The leaves were not green, they had the appearance of having been dusted over with snuff. Why, the white Camellia I brought home with me from York lasted a month, and I wore it three evenings, and even when it faded it did not fall in pieces, and its leaves were dark and glossy. I would not spend so much time if I were you, Kate, growing brown-spotted leaves."

"Oh, that is the result of the burning season we had last year, not natural to them. They get over that in time."

"Why did you not place them out in the shade?"

"Because, Herbert, there was not much shade to be found, save under the drip of trees, which they of all plants do not like."

"Not much drip last year, Kate."

"There might have been. We were always looking out and wishing for rain. And as for our Camellias, I believe they would bloom, and well too, if we could leave off tormenting them; they never have a season of quiet. That rest—doing nothing—which, they say, is just as necessary to a plant as sleep is to a child, they never have; we change about with every wind, try every new method of growing them we read or hear of."

"Well," said Herbert, "there is no other way of doing, but trying and trying again until you find the best; however dear-bought the experience may be, it is sure to lead to something better in the end, unless you are radically wrong in your method of treatment at the very beginning, and so repeat the evil over and over with each new experiment. Perhaps your mode of potting is not correct; you may not give them the right mixture of soils, or you may give it at the wrong time of the year."

"I think," said Kate, "we have not missed it in the way you say. They have had every kind of mixture we ever heard of or could imagine, and they barely have the flavour of one compound before another is offered to them. They have been spoiled by over-care and over-feeding, and the result is—"

"Disappointment," said Herbert. "I think, indeed, they have been to you like the donkey to the old man; you have followed every suggestion, and forgotten your own common sense."

"Yes," replied Kate, "it is one thing one time and another the next. Some say loam and peat are the finest mixture in the world to grow them in; then some one else affirms that chopped-up turf parings, with a little sand, are the best. One says that amateurs have nothing to do with peat, and should never use it, for it will be sure to turn sour and spoil all the soil that they use along with it; and then another is quite sure Camellias cannot be grown without peat. Some apply great quantities of manure; others call such doses rank poison, and are of opinion that clear soot water is the strongest drink Camellias should ever taste."

"It is very strange," said Aunt Margaret, "for your buds grow to a promising size and then fall off. Why, only yesterday I gathered up a dozen as large as my thumb; I think as Maud says, you do not thin them enough when they are little."

"No need to do that, Aunt Margaret; I assure you our Camellias take upon themselves that part of the work. Why, the pretty Jubilee in the east window had upwards of a score buds on New Year's-day, and only one opened, and that one the day after unfolding its charms fell down upon the stand with a brown spot in the centre."

"I would give it up, Kate, darling, if I were you. All the Camellias in Yorkshire are not worth the wear and tear you give yourself. Purchase what you want."

"A pretty price they would be, Aunt Margaret, if no one succeeded better than Kate," said Janet. "Yet I do not know why women should trouble about flowers save to wear them."

"Nor I, Janet," said Walter. "I would not if I were a woman. As a man I do not care about it; it does but wear the dress, and soil the fingers, and unfit one for other work."

"Every one to her taste. I suppose, Janet, you would rather be stitching flowers on canvas than growing them in living colours; so you may. I would rather grow them than work them; and I hope, Walter, I shall never find out that doing so suits me for other work."

"Well, if it do not, Kate, you must be constantly doing work you ought to pay for, and if I were you I would give it up at once and for ever."

"What I do I do for pleasure. Give it up, and be neither wiser nor better in the end than the beginning! Not so, Walter, unless we go and live in the heart of a city, miles away from fresh soil and pure air, and with no blue sky overhead. And then I am not sure I should not try my hand at window-gardening, rather than lose that one pleasure which leaves no regret."—MAUD.

NOTES AND GLEANINGS.

EXHIBITORS AT THE LONDON SHOWS are invited to confer with the Council of the Royal Horticultural Society on Tuesday, May 4th, at one o'clock, in the Council Room at South Kensington, with the view of discussing certain contemplated restrictions in the size of pots to be used in exhibiting plants during the season of 1870.

—THE preparations for the INTERNATIONAL EXHIBITION AT HAMBURG are progressing fast. The Committee have arranged

for reduced charges, both for passengers and articles for exhibition by the railways and steamers. The exhibition of fruits, especially those of Germany, is expected to be especially extensive. The following is a list of the gentlemen named to be the Sub-Committee for Great Britain:—Rev. M. J. Berkeley, Sibbertoft, Market Harborough, Chairman; S. Rucker, Esq., West Hill, Wandsworth; Sir Wentworth Dilke; Mr. G. Hyles, Superintendent of the Royal Horticultural Society's Garden, South Kensington, London, Secretary; Mr. J. Fleming, Cliveden, Maidenhead; Mr. J. Gibson, Battersea Park, London; Mr. A. Henderson, of the firm of E. G. Henderson & Sons, Wellington Road, St. John's Wood; Dr. Hogg, Co-Editor of *THE JOURNAL OF HORTICULTURE*, St. George's Road, Eccleston Square; Mr. C. Lee, of the firm of J. & C. Lee, Hammer-smith; Mr. T. Moore, Director of the Botanical Garden of Chelsea; Mr. F. Osborn, of the firm of Osborn & Sons, Fulham; Mr. J. Smith, Curator of the Royal Botanical Gardens, Kew; Mr. Tyler, 113, Leadenhall Street, London; Mr. H. J. Veitch, of the firm of J. Veitch & Sons, Chelsea; R. Warner, Esq., Broomfield, Chelmsford. Members in Scotland: Mr. J. McNab, Curator of the Royal Botanical Garden at Edinburgh; Mr. Thomson, Dalkeith. Member in Ireland: Dr. Moore, Director of the Royal Society's Botanic Garden, Dublin.

— Our friends in America are becoming as much bewildered among EARLY POTATOES as we are among EARLY PEAS. The following is from the *Gardener's Monthly*:—"A few years ago the Early Goodrich was to be ten days earlier than any other; then Early Rose was to be fourteen days earlier than Goodrich; Early Prince is now to be ten days earlier than Early Rose. Thirty-four days are an enormous advance in six years! but does anybody believe it? Gentlemen, you have our encouragement in your endeavours to improve the breeds of things—we hope you will be paid well for everything—except those marvellous statements, which we hope will not be charged for in the bill."

— Those of our readers who delight in looking upon masses of brilliant colours will be amply repaid by a visit in the Park Lane side of Hyde Park. The series of round and oblong beds surrounded by turf are filled with TULIPS—self-coloured and one colour in each bed. The beds of yellow Prince are most softly bright; and those of scarlet Rex rubrum are very brilliant. There are very many thousands of Tulips, and they are now at their best. They are very creditable to the vendor, Mr. W. Paul, of the Nurseries, Waltham Cross.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus that has been planted this season should be mulched with Winter Spinach, which is now superseded by the spring-grown crop. Give liberal waterings with liquid manure, sprinkling some common salt in every potful; by these means plants one year old from seed, and planted in ordinary soil, will next year yield shoots 2 inches in circumference, but it is injudicious to cut any till the third year. *Cucumbers*, prepare ridges, by throwing out trenches 4 feet wide and 2 feet deep, in light, dry soil; fill the trench with fermenting material, such as leaves, weeds, litter that has been used for Vine borders during winter, short grass—in fact, anything that will afford a gentle heat; then cover with 1 foot of the soil thrown out of the trench, make holes where each plant is to be planted, put into each hole about a barrowful of fresh loamy soil and old hotbed dung, and plant in the compost; put on a hand-light, shade from the midday sun for some time, and pay regular attention as to water, air, &c. *Celery*, attend to this in various stages, see that it does not suffer from want of water, and that the surface of the soil does not become hard, and cake; when such is the case stir at once. Prick out abundance of all the *Cabbage* and *Broccoli* tribe as they advance in the seed beds, and shade for a time; when thus treated the plants are always more stocky than when left to grow in the seed bed till wanted for final planting. Plant out *Chilies* and *Tomatoes*. Sow succession crops of *Dwarf Kidney Beans*, likewise *Scarlet Runners*. Earth-up advancing crops of *Potatoes*, and fork-up the soil among those just making their appearance above ground. Earth-up and stake *Peas* as they advance, and sow successional crops of esteemed varieties; Knight's Tall Green Marrow is a fine late Pea. *New Zealand Spinach*, plant out under hand-lights, and in rich light soil, about twenty plants, which, if well attended to with liquid manure, will yield a dish ever third or fourth day till frost set in. Thin-out all ad-

vancing crops as soon as they are fit; neglect in this respect frequently does great injury, the plants become weak and drawn, and never recover the ground they lose.

FRUIT GARDEN.

Water all trees that have been planted this season, and give them extra mulchings of rotten dung. See that the red spider do not gain a hold of wall trees, nor the caterpillar on Gooseberry trees. One way of preventing injury from the latter is to give the trees a washing with a powerful engine, throwing the water against the under sides of the leaves; this will wash off the caterpillars, which may then be readily killed on the ground. When Gooseberries are much esteemed in the family for dessert, thin the fruit on some of the choicest sorts, water with liquid manure, and protect with nets from birds.

FLOWER GARDEN.

Now that we have weather favourable for most operations in the flower garden and shrubberies, ample employment will be afforded for all the strength which in most cases can be concentrated upon them. Hardy annuals must be sown at once, covering them lightly with fine soil. Stocks, Pentstemons, Antirrhinums, Hollyhocks, &c., that have been properly hardened-off should be planted where they are to bloom, as also any remaining stock of biennials and perennials. The planting of tender Roses should not be longer delayed, and those previously planted must be examined, replacing any that appear to be much injured by the weather. Harden-off bedding plants as expeditiously as possible, but in removing them from pits and frames place them where they can be covered at night in case of necessity, and also take care that they are not injured by too sudden exposure to bright sunshine. In the meantime, as before recommended, let all beds be well prepared for the reception of their summer occupants, thoroughly pulverising the soil by occasional diggings, also decide on arrangements for planting, so as to be able to add manure or leaf mould for plants that will be benefited by such additions to the soil.

GREENHOUSE AND CONSERVATORY.

Azaleas, as they go out of bloom, should have their seed vessels picked off, and those that require more pot room should be shifted at once. Some recommend mixing a portion of loam in the soil intended for them, but strong rich fibrous peat, with plenty of silver sand, forms the best compost. After potting, every plant should be neatly staked and tied before taking it out of the potting-shed, for besides this being better done at once, it will not occupy half the time it would do if deferred until the plants had made their growth. Azaleas are exceedingly subject to thrips, and unless a sharp war is carried on with these pests immediately they make their appearance, it will be difficult to subdue them. To avoid the nuisance of having to fumigate houses or pits, have a light frame of a convenient size covered with oiled calico, in which to smoke the plants. This may be placed over the infested plants in any of the houses, or on a bed of coal ashes out of doors, filled with tobacco smoke by means of a fumigator, and allowed to remain for a few hours. If the calico is properly put on the frame, so as not to allow any smoke to escape, every insect to which tobacco is inimical will be destroyed. This contrivance is both serviceable and economical, as very little tobacco is sufficient when the smoke cannot escape, and it is a great comfort to be able to smoke plants without being obliged to inhale disagreeable fumes. Go over the conservatory frequently to regulate growth, and to see that the borders are kept moist, giving a thorough soaking when necessary, for mere surface-waterings will not reach the roots, and although useful in keeping the atmosphere moist will not serve to maintain the plants in vigour. Now is a good time to weed out all extraneous or fading plants from both this and other structures, better to destroy inferior stock than overcrowd the good. When a system of high cultivation is carried out, crowding will assuredly defeat the end in view. Take care to propagate in due time stock for succession or winter flowering. The growth of Oranges, Lemons, Citrons, Shadocks, &c., should now be encouraged by applications of good clear manure water. All Heaths and New Holland plants should be relieved, if possible, of all plants that have previously flowered and those that have made their season's growth, so that any rare kinds, and those about to flower, may have ample space to enjoy a liberal share of sun, air, and light.

STOVE.

Secure cuttings of such plants as Brugmansias, Clerodendrons, Erythrinæ, Poinsettias, Eranthemums, and of those useful winter-flowering plants, Euphorbia jacquiniæ-flora and

Gesnera bulbosa. As regards Orchids, those who have only one house to grow their whole stock in must make a compromise in point of temperature between those which are natives of hot, moist countries, and those which come from cooler regions. To accomplish this a free circulation of air should be kept up during the earlier part of the day, and even a little at night, if possible, accompanied with a great amount of atmospheric moisture; and to accommodate with as little sacrifice as possible such as *Aërides*, *Saccolabiums*, *Dendrobiums*, &c., a considerable amount of heat should be shut in very early in the afternoon. *Centradenias* now exhausted with flowering should be shaken out of their pots and repotted. Fibrous loam, fibrous heath soil, with charcoal and coarse sand, make an excellent compost for them.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Took the opportunity of a dry day to sow the main crops of winter vegetables, as Coleworts, Brussels Sprouts, Savoy, Broccoli, &c. Sowed also Lettuces, a few Cabbages, a pinch of Cauliflower, and Walcheren Broccoli, though, as a general rule, except late in autumn, we have never found anything to beat a white Cauliflower, and from the London Market Cauliflower downwards, we have always found the crops were very much alike when well managed. Sowed also the last piece of Carrots, the first sowings coming up well, and the Onions coming up well and regularly after the warm showers. Sowed also Leeks, as few vegetables are more healthy. Once we never could have enough huge white specimens to send to table, whiter than the finest blanched Seakale, but now fine beds are scarcely touched. With something of the Onion about them, many may eat them safely who could not partake of Onions, and some, who should know, tell us that, instead of heating, Leeks cool and purify the blood.

Planted more Potatoes of the succession kinds; the first are just above ground. Our third lot in an earthen pit is looking remarkably well, and is growing too strong and lengthy in this weather, fully exposed though the plants are all day. To prevent them growing much higher we have nipped out the terminal bud of the shoot with the thumb and finger, or the point of a sharp knife. This does not at all check robustness of growth, or affect the produce, as cutting off a piece of the haulm would be almost sure to do. Sowed more Celery, and pricked out in boxes and pots the earliest-sown. We have several times spoken highly of the White Incomparable as a dwarf kind, of which, if it is 15 inches in height, you may send a stiff plant or head a foot long to table; but as there are many complaints of failure respecting this variety, we would say, that as it is a slow grower the plants should be forwarded and be of a good size when planted out, say in June and the beginning of July for main crops, and earlier for first crops, when Celery is wanted in July. For the latter purpose the plants must be encouraged at first under glass, and with a little heat.

Chives.—We mention this little plant because often we have been under obligations to it. Frequently young Onions are much in demand, when not larger than stocking needles, for soups, jellies, &c., and not unfrequently when young Onions are not to be had, unless when grown under glass. A few Chives then come in useful, and, well dressed, can hardly be detected from young Onions. Shred in soups, &c., they are quite as good for giving flavour. We have frequently put half a dozen good roots in a hotbed in order to have them early, just as we would do with a few roots of Mint and Fennel; so as to be independent of cold, frosty weather.

FRUIT GARDEN.

We find that the lime wash has kept the birds from our Cherry and Apple trees, but soot and lime washing did not save a fine row of dwarf Plum trees—only a few blooms are left, and the trees were a thicket of bloom buds. Three years ago they were served worse, for a great part of the wood buds were also nipped out, and the fine shoots died during the summer. This season a few dwarf Cherry trees were much picked, but being closely netted afterwards, there will be enough buds for a good crop if the flowers set fairly. Some bird-fanciers tell us that even in such cases the birds are our friends, as they go to the buds that are infested with insects of some kind. Now, we cannot be sure as to those buds that have had the centres scooped out, but in the hundreds and thousands that are picked and dropped, without scooping out the centre, we have failed

to discover any sort of insect or egg, even with a microscope to assist us.

Peaches and Apricots.—Many are complaining of their trees partly dying-off this season, and though ours looked very promising and full of bloom, we find that numbers of shoots are dying, and the bloom shrivelling up as if a hot blast had passed over them, and that, too, after the mild weather had set in. We fear that the heat and dryness of last summer is telling on them now. In our orchard houses we shall have a fair crop if the fruit stand anything well, but we shall be saved the trouble of picking off such quantities of fruit as we used to do. The bloom was more scant, we thought, than usual, and as our sewage given last summer is showing its effects in the increased vigour of the trees, we shall give less water lest the wood should become too strong. Moderately strong wood well ripened is to be desired, rather than luxuriant wood and huge leaves. Some rather vigorous trees we shall not disbud so soon as usual, and disbudding a little later will check luxuriance and yet not affect the young fruit. Much may be done to check excessive vigour at the roots, by the treatment given to the young shoots, for roots and leaves will always have a relative action.

In vineries we are removing the hardier plants on the stages, and shall replace them with Ferns, fine-foliaged Begonias, Achimenes, and Gesneras, that rather like the shade and heat. We shall be obliged to let the latest Vines now grow, and give them a little help in a cold night.

Melons.—We have not tried to be early this season; in fact, after the plants were strong we could not spare room under glass for them, and we have large Cucumber plants in 8-inch pots that must wait a little longer before they are turned out. Trained-out and disbudded the first bed of Melons, as detailed in years gone by, and planted a pit heated by hot water. To save labour now in wheeling in soil, and afterwards in wheeling it out, we made a good deep ridge of soil, chiefly in the centre, quite sufficient to carry a heavy crop of Melons. Back and front are now filled with other things, and as the Melons grow, spars or brushwood will be placed back and front for the Melon shoots to run over. Many years ago we grew fine Melons in 15-inch pots, and ever since then we have found the plants more fruitful when they had not such a mass of soil to root in. We think the roots like depth more than width.

Strawberries.—All those plants intended for forcing that did not show fruit we have thrown away, as not to be so much depended on as those that bloomed freely. For reasons given, we have had more than the usual number of what are called blind pots this season. Generally we prick out a lot of runners in rich soil early every autumn, as, after standing the winter, we could take up a lot if wanted for late forcing, such as now and onwards, until they come in in the open air, but on closely examining them we find that some sorts have grown but little, and a great many as yet are showing no flower buds, and we hardly expect they will do so. One advantage of this pricking-out system was, that in making fresh plantations in spring we could take up with balls the plants that were showing the fruit buds, and secure fruit-bearing plants; and thus treated they would strike freely into the fresh soil, and bear the first season. We can only account for their present appearance from the parching which the mother plants received last summer when watering them was out of the question. For the same reason, we do not expect such masses of bloom as usual from the established plants out of doors. We shall save most of our fruitful plants in pots for planting-out, and may even repot a few for early forcing. The late plants in pots are showing well, but, of course, they have had much more time.

As respects taking up strong fruitful young plants now that were pricked out in rich soil last autumn, some who have a glass house may thus obtain fruit a few weeks earlier by merely taking up with balls and potting them firmly. This plan, however, will only succeed for late forcing; it will not do for early forcing. For this purpose the plants must be established in the pots, and the pots full of roots in the previous autumn. It will be an improvement if, in addition to potting now, the pots could be plunged in a mild hotbed out of doors, and only placed under glass when the fresh roots were clinging to the sides of the pots. We have often treated them in this way, and most likely will pot a number of plants in a few days. We have also made a slight hotbed covered with earth, and turned such plants into it at once, but giving plenty of air until the plants were rooting freely. These modes enable us to keep up a succession without having so many pots filled all autumn and winter. Wherever there is a lawn, short grass, and tree leaves,

or an old hotbed, there need never be much want of bottom heat for such purposes.

ORNAMENTAL DEPARTMENT.

We have had much mowing, digging, sowing, moving, potting, temporary planting, &c.

Rose House.—Last week we alluded to a house for Roses, and in a northern or cold district we would prefer a lean-to. We would then have the most tender Tea, Noisette, and Perpetual Roses against the back wall; and if the greatest variety in the space were aimed at, we would have good single plants in pots in the front border. We think for an unheated house the lean-to would thus have great advantages. For a span roof we could hardly succeed so well without a mode of heating; but a span-roofed house would have the great advantage that we could walk comfortably round it, have a bed in the centre, and one on each side, where we could always see or gather the finest Roses in perfection, uninjured by winds or rains. We have often resolved to give Roses another day out of doors, and the weather made them unsuitable for our purpose. We hope to see roseries and even flower gardens under glass. A small space thus protected, thoroughly ventilated, but from which storms of wind and rain could be excluded, would yield more satisfaction than ten or twenty times the space entirely at the mercy of the elements. How often have we known men working hard, and for much extra time, to put a large garden in good order to meet the scrutiny of some visitors of the heads of the establishment, and a drenching rain shortly before their arrival would make flower beds, Roses, &c., look as miserably as they possibly could do, and requiring several days of fine weather before they were passable. A glass roof would have saved all the annoyance, and, whatever the weather, there would be a delightful promenade. There is a sort of charm in going under a glass roof, even though there is nothing very particular to see.

Rose Cuttings.—There being certain sorts of Roses that we were anxious to increase, we made cuttings of some of the best of the prunings. We had previously prepared a slight sweet hotbed, and a number of small pots, well drained, with a little sandy loam at the bottom, and then filled with drift road sand. The best cuttings now are small firm side shoots, from 2 to 3 or 4 inches in length, that can be slipped off close to the older wood, and cut there with a sharp knife. Whether one or two joints, or young shoots, on this older piece be left, it is important that no leaves of any large size should remain. On such older wood we have even nipped out the point of the young shoot, and trusted to the incipient buds that were sure to come from the base. These cuttings of older wood should be inserted for most of their length in the sand, leaving only a bud or two above ground. When the young shoots of the current year's growth were more advanced than the prunings we have just taken, such as would be found in many established Roses, we have often struck the young shoots of the present spring, when they were from 3 to rather less than 4 inches in length. But these were treated differently. The young shoots were slipped off from last year's wood, with a little heel of the older wood at the base. That was neatly dressed, and all the leaves cut off clean from the young shoot, except the small ones at the point. The cuttings were then put into similar pots, and in silver sand, but planted as shallow as they could be, so as to be firm. They were generally set in the hotbed, and then were plunged in a few days. Damp and confined air were the chief evils to be guarded against, and that was most easily done by giving a little air to the frame or bed, night and day, taking it away only when the sun shone brightly, and shading or sprinkling them to prevent a cutting flagging. With attention to these matters of detail, Rose cuttings even now may soon be made into Rose plants. For the time, however, they would be better of being placed in a very mild heat for ten days or a fortnight, and of being removed into a brisker heat afterwards. One of the surest means to cause a failure is to keep them in a close, warm atmosphere at night. A quarter of an inch of an air-opening at the top of the sash or box will often make all the difference between failure and success.

Permanent Edgings for Flower Beds.—We have commenced with these, and will try to finish them in a few days. But for a stress of work they ought to have been done earlier. For instance, we shall have some long lines of Cerastium where it was last year, and it has stood the winter well. We were half inclined to cut it in on each side and let it stand, but several times we have been annoyed with blanks at the wrong time when we have thus acted. We preferred lifting the edging, taking a spit out where it stood, placing that on the border, and

replacing it with well-aired pulverised soil from the bed or border, and then breaking up the old plants into pieces with roots, and planting the row afresh and rather thickly. We have never failed to form a fresh, regular, uniform row by this plan, and it is sure to be broad enough before the season is over. When thus replanted, and so late, it wants but little trimming during the season.

Temporary Hotbeds.—We were pressed for a place for forwarding some small plants, and in which to sow a lot of tender and half-hardy annuals. We had some frames over Potatoes that had been several times fingered over, but still too good to be trusted to the weather; the frames and glass were taken off, a rail placed back and front on pots, and wattled hurdles laid over at night. A layer of long litter was used as a foundation, next a layer of short grass as hot as it could be, then a layer of litter to keep the heat down, and, lastly, 6 inches of leaves and old hotbed dung on the surface, and a few inches of dry ashes. For a temporary sweet hotbed nothing could be better, and by the time the Potatoes, &c., are gone, and fresh beds made in their place for other subjects, the frames can be lifted back again. For such purposes light frames are invaluable; they are so easily moved. A few weeks inside of such a frame make all the difference between early and late Celery, and as stated last week, half-hardy annuals thus helped and gradually hardened-off, are liable to fewer casualties than if sown earlier. We thus often make beds and fill them in a few hours, without any previous preparation of the materials. The main point is the thickness of the sweet surfacing.

Moving Bedding Plants.—The Calceolarias moved into earth pits lately, are growing remarkably well, and are mostly exposed during the day. There need be no hurry in finally transplanting such plants, as they will lift with balls, and scarcely feel the moving. We have been obliged to dig out Celery trenches to have our plants moved into them. We lately stated that we put great numbers of bedding Pelargoniums into pieces of turf, and set them on the Vine borders. Many of these we have moved into earth pits and Celery trenches, as the turf is full of roots, and the young healthy fibres are hanging all round it like a wig. We moved a lot of the most forward, because the loss of these roots, if they run freely into the dung and leaves, would cause the plants to suffer when finally transplanted. We think of moving a lot more of the Pelargonium tribe, which will be in fine condition for planting in about a month, and we shall do little in the way of final planting before that time. With good plants not curbed in pots, but growing freely in the prepared ground, and a well-aired, heated soil to turn them into, a few weeks later in planting will be more than made up for in growth and bloom.—R. F.

COVENT GARDEN MARKET.—APRIL 28.

We have but a dull trade for rough winter vegetables, but good Broccoli and spring Cabbages are in fair request. Imports are heavy, and comprise the usual assortment. Amongst house fruits are Peaches and Figs, both of which are very good. Large stocks of old Potatoes of inferior quality remain on hand, the demand being very slow. Good samples still command from 10s. to 12s. per ton.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons each	2	0	5	0
Apricots doz.	0	0	0	0	Nocturnas doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	4	0	12	0
Chestnuts bush.	10	0	16	0	Peaches doz.	30	0	42	0
Currants ½ sieve	0	0	0	0	Pears (dessert) doz.	0	0	0	0
Black doz.	0	0	0	0	Pine Apples lb.	8	0	12	0
Figs doz.	15	0	24	0	Plums ½ sieve	0	0	0	0
Filberts lb.	0	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	1	6	Raspberries lb.	0	0	0	0
Gooseberries quart	0	0	0	0	Strawberries oz.	1	0	2	0
Grapes, Hothouse lb.	10	0	12	0	Walnuts bush.	10	0	16	0
Lemons 100	4	0	8	0	do. 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	6	0	Leeks bunch	0	4	0	6
Asparagus 100	5	0	8	0	Lettuce score	1	0	3	0
Beans, Kidney hd.	2	0	3	0	Mushrooms pot	1	0	1	6
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	3
Broccoli bundle	1	0	2	0	Onions bushel	12	0	14	0
Brus. Sprouts ½ sieve	0	0	0	0	Parley sieve	3	0	4	6
Cabbage doz.	1	0	2	0	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Peas quart	5	0	3	0
Carrots bunch	0	8	1	0	Potatoes bushel	4	6	6	0
Cauliflower doz.	3	0	6	0	Kidney doz.	4	0	7	6
Celery bundle	1	6	2	0	Radishes doz. bunches	1	6	0	0
Cucumbers each	0	6	1	0	Rhubarb bundle	0	6	1	0
Endive doz.	2	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	3	0	0	Tomatoes doz.	1	0	2	0
Horseradish bundle	3	0	5	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

MILDEW ON ROSES (W. J. F. H.).—"It is difficult to prescribe without seeing the patients and knowing more circumstances than are usually communicated. Mildew, or more properly white fungus, may proceed from the roots through the circulation; or it may be deposited on the leaves from without. I think rotten wood and fresh horse manure placed next the roots may be conducive to mildew through the circulation. Still weather is favourable to its development. The spores are always in existence and ready to develop themselves on suitable leaves in suitable weather. I lost last year a noble wall-tree of *Triumph de Rennes*, 12 feet high, by mildew. From head to foot, as soon as a leaf appeared, it was white as snow. I determined to strip the tree of leaves, for an experiment, as often as the mildew appeared, but the noble tree died in the middle of summer. I believe the mildew proceeded from the roots. If mildew is from without, you had better try 3 ozs. of blue vitriol dissolved in hot water, and then added to three gallons of cold water. Probably this, if the tree be well syringed with it, may stop it. I advise rosarians to kill at once aphides, and also remove leaves that have blotches of orange fungus. By timely attention to this it is surprising how much annoyance is escaped.—W. F. RADCLIFFE."

MARÉCHAL NIEL ROSE NOT FLOWERING (T.).—"Take up your *Maréchal Niel* Rose from the open border and plant it against a south wall. It is a Cloth of Gold. When you plant it against the wall sink under its roots some cobbles to insure free drainage. Then cover the roots with one third each of loam, ashes, and decayed manure. It wants little or no pruning. I bought a number of plants; four of them grew like *Poplars* and will soon bloom finely, some I gave away, and the others, though treated in the same way, made no growth at all.—W. F. RADCLIFFE."

CONTRIBUTIONS (C. Hockney).—We shall readily receive any communications from you, and there will be no charge.

TACSONIA VAN-VOLKXEM (Comet).—It was introduced into Belgium in 1858, by M. Van-Volksem, who found it in a garden at Bogota.

ERADICATING DAISIES (A. R. H.).—There is no other mode than employing women armed with knives, to scoop out each plant; the knives should be thrust down to the extremities of the roots. A little earth to fill up the cavities thus made in the turf, and a sprinkling of Suckling seed on the surface of the earth, will be a speedy and effective proceeding.

STOPPING CHRYSANTHEMUMS (St. Bridget).—Your plants are already too tall without being stopped. We should stop or take off their tops at 6 inches now, and you may continue to stop them until July, removing all suckers as they appear, and training the plants with a single stem.

COMPOST FOR MIGNONETTE (Idem).—Two-thirds light fibrous loam, and one-third leaf mould or old cow dung, with a free admixture of silver sand, will grow it in pots well. The compost should be torn in pieces with the hand, and made rather fine but not sifted. Provide good drainage, and to keep the soil open, one-sixth of charcoal in pieces from the size of a pen up to that of a hazel nut may be added.

FLOWER GARDEN PLANTING (A. Parson's Wife).—Either arrangement would look well, but we decidedly prefer No. 1. (C. J. Anclcy).—We think your planting good.

DROPS ROUND VINE LEAVES (H. A. B.).—The heavy dewdrops hanging on the points of the leaves of the Black Alicante Vine are a good sign rather than otherwise, proving, first, that the Vine is robust and healthy; and secondly, that you have a moist atmosphere in the house, and thus the small points of the leaf becoming cold, condense the moisture in the atmosphere. It will not remain on the leaf until midday generally, if you give air early in the morning.

VINE LATERALS IRREGULAR (Reader).—If you are very particular in having the spurs on your Vine short, regular, and alternate—first on one side and then on the other—a bud or graft could be placed on the faulty side before the sap rises. Provided there are plenty of buds or spurs, we consider it of little importance, as the young shoot can easily, if carefully done, be trained on either side of the main stem. For regularity, you may leave shoots that do not show fruit; they will most likely do so when cut back in the following year, but let them grow four or five joints before stopping them, instead of one or two. We generally nip out the points of bearing side shoots at a couple of joints beyond the bunch; this causes less stoppage to growth than taking more away at a future time. We merely nip out the terminal bud.

INSECTS ON PEACH TREES (F. M.).—The little insects of which you found a considerable number on your Peach trees are a minute species of false scorpions (*Obisium* sp.), they feed upon still more minute insects, and are consequently beneficial to the trees rather than otherwise.—W.

DESTROYING PLANTAIN (I. N. C. P.).—There is no other mode of destroying the Plantain in your field than by uprooting each with a spud; and the spud should be thrust in deep. Two or three women would soon clear an acre.

RENOVATING SEA-KALE BEDS (M. H.).—We should think the bed worn out, and advise a new bed being made. You may divide the crowns if too thick and too high above ground, planting them afresh, but they would not encrease so well as young plants, which we would plant next February or March, leaving the old stools as they are, to give you a

supply next year, and when the crop is cut destroy them. The ground for the new plantation should be dug, or trenched 2 feet deep, and well pulverised, mixing with it a large proportion of well-rotted manure, leaf mould, and sand, adding the last very liberally if the soil is at all heavy. If hot dung or litter has not been used for blanching, the ground of the old plantation should be manured in spring after the crop has been cut and the blanching material removed, planting it neatly in with a fork; but if dung is used for forcing it will only be necessary to remove the strawy part, pointing the rest neatly in with a fork. A sprinkling of salt may be given when the ground is pointed over. The plants should be allowed to grow as freely as they will during summer, encouraging them with plentiful supplies of liquid manure; but the flower stalks should be removed as soon as they appear, cutting them off to the lowest leaves.

MELONS (—).—The middle or end of May is as soon as we expect to see Melons from dung frames. The cold weather of March would retard the growth of the plants for a fortnight or three weeks; but so much depends on circumstances, that it is difficult to state correctly when Melons may be expected from dung beds. Full instructions for Melon culture were given in vols. 6, 7, and 8, New Series.

REMOVING ASPARAGUS AT MIDSUMMER (J. Constant Reader).—Asparagus may be safely removed at midsummer, if taken up carefully with as much soil as possible about the roots. These should not be exposed to sun and air more than is unavoidable. After planting give a good watering, and continue to water in dry weather till the end of August.

BUDDING THE APPLE, PLUM, CHERRY, APRICOT, AND PEAR (J. H. D.).—They should be budded at the end of June or beginning of July, when the buds are well formed in the axils of the leaves, and the sap runs freely. The operation is performed in the same way as the budding of Roses, but on the main stem at the height required. The stocks planted in January may be budded this year, and if the buds fail, grafted next spring.

SELECT DAHLIAS (Idem).—Shows: Royal Robo, Paradise Williams, Fanny Purchase, Beauty of Hilperton, Madge Wildfire, George Wheeler, Lord Lyon, Vice-President, Waxwork, Starlight, Vanguard, Princess of Wales, Lord Daudraary, Criterion, Herbert, Flossy Gill, Clara Simons, Harriet Tetterell, James Buckhouse, Lady Jane Ellis, Stella Colts, Bencon, and John Sladden. Fancy: Butterfly, Mrs. Charles Kenn, Statler, Petress, Nora Creina, John Salter, Flambean, Bessie Wyatt, Mrs. Godwin, Magpie, Gem, and Pluto.

SELECT VERBENAS (Idem).—Lady Broughton, Velvet Mantle, Shakespear, Constance, Interesting, Miss Turner, Reine des Roses, Le Grand Boule de Neige, Mrs. Dean, Attraction, Champion, and Harry Law.

MANAGEMENT OF VINES IN POTS (W. J.).—The shoots should be stopped at the leaf above the fruit, and the laterals ought to be pinched at the first leaf, or if the Vines have not enough of foliage stop them at the second leaf, and then to one leaf or joint afterwards. The best top-dressing for Vines in pots or borders is equal quantities of loam from a pasture pared off an inch thick, and sheep droppings, or horse droppings free of straw, laid up for three months, and chopped up, adding one-fourth half-inch bones, one-sixth calcined oyster shells, and one-sixth charcoal, the whole well mixed. You may use instead, loam, cow dung, and hotbed manure in equal parts, and top-dress therewith once a month after the Vines are in leaf, until the berries attain their full size previous to changing colour. A good manure for placing in the evaporation troughs is formed of guano, 4 lbs to 20 gallons of water, and if used for sprinkling the paths, 4 lbs. to 30 gallons will be sufficiently strong.

MANDEVILLA SUAVICOLENS (Idem).—We do not think your seedling 30 inches high will flower this year. Encourage its growth so as to form a good plant, and it will no doubt reward you well next year. It is one of the best greenhouse climbers.

LILIUM LONGILOBUM CULTURE (D. H.).—The only plan that we know to obtain more bloom is to remove the offsets in October, and pot none but the largest bulbs, disturbing them as little as possible. Pot the offsets singly or two or three in a pot, and select the strongest every autumn. The treatment does not differ materially from that of other Liliiums, only in potting, the bulbs should not be disturbed more than can be helped, and the soil ought not to be allowed to become dry at any time. Keep the bulbs cool in winter.

PEACH TREES IN HOUSE UNFRUITFUL (Edge Hill).—One thing seems to militate against your theory of impure and smoky air preventing your Peach trees fruiting, and that is the healthy appearance of the trees, and their freedom from all insects last season. Where, as you say, the Rose will not live in smoke, we have found Peach trees insect-infested. We were thinking that the trees might be too robust to have their wood well ripened, but that idea is dispelled by the fact that they had been replanted only two years ago. Is it possible that the trees might have been over-dressed with the composition in autumn? If not, then under the circumstances, and especially as the trees have not been fruitful for years, we must attribute it to the gas, smoke, &c., of the locality. If so, the only remedy we can think of, is to have good large ventilators, and cover these ventilators with close-woven woollen netting, or rather open muslin, washing them as they become dirty, so as to let air in and keep soot out. We know that such soot will clog up the anthers. When we were in London, we could have plenty of Pear blossom, but scarcely any fruit, but we obtained good crops of Apples, and the reason seemed to us to be, that the Apples bloomed later when the air was less smoky. We could grow stove plants better than greenhouse plants, because less air was admitted. Try sifting the air.

SAVING CABBAGE SEED (Rob Roy).—It is usual to sow the seed now, plant out the young plants when large enough, and allow them to seed in the following year, which is to all intents the treatment of biennials—sown this year they flower and seed the next. Some cut off the heart or Cabbage and transplant, and some sow in August, plant out in spring, cut the heart or Cabbage in the ordinary way, and transplant in autumn, allowing the plants to run to seed. Our opinion is that the former is as good a plan as the latter, but we defer to the opinion of seed-growers, who have very obvious reasons for keeping up a supply of the true stock. We should be obliged by the opinions of others on the subject. Conve Tronchuda should be treated in the same way, but requires a warm situation.—G. A.

SCOTCH KALE (Correspondent).—We do not know any Highlander who would supply seed.

SOAPSUDE (An Amateur).—You may apply soap suide to all the plants you name, but it soda is largely used in washing you must be careful not to give the liquid too strong, nor too often. It would be well to dilute it, if very strong, with twice the quantity of rain or pond water.

SOWING SEED FOR DECORATIVE PURPOSES (Idem).—No time ought to be lost in putting in the seed, but we have sown it up to the 15th of May, and had fine plants.

CHARLES LEVENYRE ROSE (Idem).—It is of vigorous habit, and is otherwise with you from want of manure. Manure it well, and water it freely in dry weather.

VERBENA CUTTINGS (Idem).—The cuttings in boxes may be kept after this time under a shed where there is plenty of light, but they would do better in a warm, sheltered situation, affording protection from frost at night.

LIQUID MANURE (Idem).—You may prepare liquid manure as you propose by pouring water over the horse droppings, letting the whole stand overnight. A peck of horse droppings will make thirty gallons of liquid manure, which need not be strained for out-door watering. It is desirable to strain it for plants in pots for the sake of appearance.

DESTROYING WOODLICE (A London Subscriber).—We know of no better means of trapping woodlice than the potato baits—a boiled potato wrapped loosely in a little hay, being placed at the bottom of a small flower pot, and the pot put on its side at night in the places which the woodlice frequent. In the morning shake the woodlice into boiling water. This persisted in will completely keep them under.

BLACK CURRANT BUSHES ON SANDSTONE (Sussex).—We do not consider the climate the cause of failure, at least we should not give up their cultivation without first trying liberal dressings of manure, as we consider the failure arises from the hot dry soil, and Black Currants like moist soil. The use of the cultivator should at once be stayed, contenting yourself with the removal of the weeds. Give a good top-dressing of manure now, cover it lightly with soil to prevent its drying, and water as much as you can, giving liquid manure during dry weather. In autumn again manure, not putting over the soil about the bushes, as that could not be done without injury to the roots. In spring repeat the top-dressing of the manure, and water in dry weather. We think you will thus not only secure better growth, but plenty of fruit. The less the soil is disturbed about the plants the better, but keep down the weeds.

TEMPERATURE OF WATER FOR SYRINGING (W. K., Augmering).—You may use the water when it is 6° colder than the atmosphere. This, we presume, is the case during the morning and evening. Could you not

have a shallower vessel, holding enough for one syringing, placed so that it would have a better chance of being heated by the sun's rays to a temperature approaching that of the house? For watering, the temperature of the water should be equal to the mean of the house, and for such a purpose you may safely use the water from the tank.

GRAPES AND FIGS FOR OUT-DOOR CULTURE (Idem).—In addition to, Esprit and Royal Muscadine Grapes, you may have Black Cluster, Early Saumur Frontignan, Early White Malvasia, Cambridge Botanic Garden, Ingram's Hardy Prolific Muscat, Early Maltingre, and Pitmaston White Cluster. The Grape you see on farmhouses resembling the Black Cluster, is probably Miller's Burgundy. Of Figs, grow Brown Turkey, Early Violet, White Marselles, and Brunswick. The Black, Brown, and White Ischia Figs are in the catalogue of the nurseryman you name. There is a seedling Grape with a Frontignan flavour, raised by Mr. Standish, remarkable for its earliness. It is well worth a trial in the open air, but we do not know the name of it.

BLACK PAINT FOR HOT-WATER PIPES (E. A. S.).—Use lamp black, brought to the consistency of paint by mixing it with boiled linseed oil. The pipes should be made quite hot and then be coated over with the paint, keeping them hot until it becomes dry, when the smell will pass away; but if the pipes are coated over when cold, however well the paint dries, when they become hot an offensive and injurious vapour will be given off. Two coats are necessary; the second should be put on when the first becomes dry. The paint should be well brushed into every part of the pipes.

FUNGUS AND FUNGI (An Old Subscriber).—The first is the singular and the second the plural.

NAMES OF PLANTS (T. Marrell).—What the man calls "Princess Amelia," is the *Fritillaria*, one of our native plants, sometimes called Chequered Daffodil or Chequered Tulip, *Fritillaria meleagris*. (*Constant Reader*).—1, *Dielytra spectabilis*; 2, *Deutzia gracilis*; 3, *Stachys lanata*. (*M. Hebblethwaite*).—*Othonna pectinatis*, also called *Euroopa pectinatis*. (*J. C. Bromley*).—1, *Nephrodium decompositum* var.; 2, *Davallia pentaphylla*. (*H. J.*).—2, *Nephrolepis cordifolia*; 3, *Phymatodes vulgaris*; 4, *Polypodium loricum*; 5, *Selaginella*, probably *S. rubricaulis*; 6, *Selaginella Kraussiana* (*S. hortensis* of gardens); 7, *Orobolus vernus*; 9, *Arabis lucida*, fol. aureis variegatis; 10, *Nemophila atomaria*. (*A. B.*).—Both your fronds appear to us to be from *Adiantum hispidulum*, one being a barren, the other a fertile frond. (*C. G.*).—1, *Aloe striata variegata*; 2, *Gasteria verrucosa*. (*H. A. B.*).—1, *Genista racemosa*; 2, *Cineraria maritima*; 3, *Farguria grandis*; 4, *Matthiola tristis*. (*G. S.*).—Your *Primula* appears to us to be a small-flowered form of *P. cortusoides*. (*W. D. A.*).—*Amelanchier canadensis*. (*Tyro*).—*Populus tremula*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 27th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 21	29.990	29.899	64	35	51	48	W.	.03	Clear and fine; cloudy; fine, cool air at night.
Thurs. 22	30.018	29.995	65	35	51	48	S.	.00	Very fine and clear; cloudy; very fine, starlight.
Fri.... 23	30.04	29.955	60	49	52	48	S.	.51	Fine, very mild; overcast; heavy showers; rain.
Sat.... 24	30.041	29.921	65	43	53	48	N.	.00	Densely overcast; cloudy, fine; clear and fine.
Sun... 25	30.228	30.156	69	84	64	49	N.	.00	Fine, cloudy; very fine; fine, mild air.
Mon... 26	30.227	30.142	64	38	53	50	E.	.00	Foggy, fine; very fine; densely overcast.
Tues... 27	30.157	29.996	66	40	54	50	E.	.00	Fine and clear, very fine; clear, cold wind.
Mean	30.099	30.019	64.71	33.43	52.57	48.71	—	0.54	

POULTRY, BEE, AND PIGEON CHRONICLE.

COMPOUND FOODS FOR POULTRY.

The question of the value of "foods" in the rearing of chickens is one of such importance that I was glad to see the lecture and opinion on the subject by so practical a man as Mr. Jeffries in your columns. As a breeder and exhibitor with many years' experience, I have given the matter much attention, and I now venture to send you the results of my observations, in the hope that they may prove interesting to some of my brother fanciers.

I am one of those extremely sceptical in the matter of specifics and new preparations, having tried many of them with but one conclusion—that if they did no harm they were of as little use. I found nothing equal to the old system, and to this day continue in part to adhere to it.

Some years since a prospectus of Dear's food came accidentally under my notice, and I mentioned it to my neighbour, Mr. F. Pittis, the well-known breeder of Pencilled Hamburgs, and we both agreed to give it a trial. At the time I had that scourge of the poultry yard, roup, as an unwelcome visitor, and I put some of the birds on the new diet; they fought shy of it at first, but took to it after a short time, and every bird recovered. Since then I have used a small quantity daily, and my birds have had no re-appearance of the disease. So far it has proved of great value, but as to its fattening qualities, of which Mr. Jeffries speaks so highly, I can give no opinion, as I breed simply for exhibition.

Of course the composition of these "foods" cannot vary very considerably unless it is in the different qualities of the meal of which they are composed. Dear's food is somewhat

coarser than flour, of a dull yellow colour, and smells very strongly of drugs, in all probability of a tonic nature. Some little trouble is required in its preparation, as it must be scalded with boiling milk or water previous to use, in the case of rearing chickens, to the thickness of custard, when it has this advantage that little water is necessary, a very strong reason perhaps why chickens reared on it are not so liable to gapes. I should judge one pound when prepared would make about four of the custard, so that there is nothing to object to on the score of economy.

There are, I think, three great desiderata requisite in artificial foods—viz., economy, prevention of disease, and stimulating qualities, and to secure general use a food must possess them. As far as my opinion goes, Dear's approaches the nearest to this standard; but as at this season many would be glad to give anything really valuable a trial, perhaps some of your readers who have tried it would state the results in their case.—HENRY LOB, Appuldurcombe, Isle of Wight.

DRAWINGS OF POULTRY.

I HAVE often thought how useful and interesting it would be if committees of poultry shows would give drawings of poultry instead of cups, having them made, say, life size, exact in all points and in shape, so that one could refer to them as a standard of excellence. How frequently do we hear, "My bird is first-class, and I think he ought to have had the prize;" but, after a close inspection, it is found to be deficient in shape, colour, and comb. I have often known a man buy all the best birds an amateur had for a small price, as the breeder did not know the true points for exhibition, but if he had something to guide him he would soon see the faults. I think it would be a

good speculation for an artist to try, for I know many who would like their rooms furnished with first-class pictures of poultry. I think if the trial were made at such shows as Birmingham and Manchester it would be found that successful exhibitors would be quite satisfied with a choice painting; and the example would be followed at other shows.—R. H. D.

EGG PRODUCE.

"C. B., Warrington," in *THE JOURNAL OF HORTICULTURE*, of the 8th of April details his egg produce, and of course presumes it to be something uncommon by doing so, if I may judge him by myself; but I differ from him from experience. Thirty hens in the long month of March produced him 466 eggs; eight hens in the short month of February produced me 160 eggs; multiply by 3, and my twenty-four hens would beat his thirty by fourteen eggs. My eight hens are four Baff Cochins, two Brahmss, two Dorkings, and one Hondan.—A. WYNNE.

PET PIGEONS.

PIGEONS were my first pets; Pigeons are pets with me still. Thirty years ago my first pair were bought for 6d. Sixpence would buy a pair of common Pigeons yet. My first Pigeons were red with pure white heads; a year or less proved them to be both cocks, but, as my principal school companion had a pair both hens, we made an exchange, and were both suited. The hen I obtained in exchange was blue with a white head, and feathered on the legs and toes. Bigger boys than I at that time said that Pigeons with feathery legs would rot the eggs, but that was not my experience. My pair were noble breeders—we used to reckon on a pair a-month. But Pigeons sit seventeen days, and although they had a nest again in a fortnight, yet five weeks would be about the proper time, and nine or ten pairs of young throughout the year. Certain it is they bred for years the whole year round, except for a month or so about August. They always produced two young ones at a time, and never failed to rear them. The hen was a great pet, and would peck from my hand without fear. She soon learnt her mate to feed from the hand too, but he was long a little more shy. At length they became so tame that they would come to me anywhere at my call, and would feed from my mouth or pocket, or wherever I presented the food to them. They used to accompany me 200 or 300 yards as I set off to school—one sat on each shoulder, and I often fed them from my mouth on the cake and cheese that I had stored for my own dinner. When I returned at night I used to call "Pease" when I came in sight, and off they flew, or at least one of them, for there was constantly one on the nest, and perched on my shoulder or head, and I fed the bird with the crumbs I had saved on purpose.

That pair of mine, I remember, were great feeders. At one meal they would pick up as many raw beans as I could lift with my "gowpens" (two hands together half open and side by side) from the horses' bin. They were very fond of beans and peas, or oaten cake. The hen was the pluckiest, too, for whenever I threw down food she jumped right to the middle of it, and, with outspread wings, went round and round, and tried to keep hens, and Ducks, and Pigeons from taking a particle till she was gorged; even her own mate was served in the same way—self, and nothing but self, seemed predominant with her till satiated. She defended her nest nobly too, for with bill and wings she strove to drive off every intruder. Her pertness was at last the means of hastening her death, for one wintry snowy morning, while gathering food amongst the horses' feet in the stable, she had elipped beneath one of the horses' feet, and thus was crushed to death. The cock reared the young ones then in the nest, and flew about for some years after. At length he wandered to a neighbouring village and brought therefrom another wife, but the owner would have his own, and of course took it away time after time. But the old cock still persisted in decoying the unmated hen, and by-and-by his constancy in wooing cost him his life, for the owner of the hen, provoked beyond measure, took a gun and shot him while out a-wooing, after having been in my possession some eight or ten years. This was the last of my first pets.—MIDLAND SQUIRE.

RABBITS DYING YOUNG.

I REMOVED before I saw your answer to my question that I had discovered a clue to the mystery. Another litter died

with exactly the same symptoms as I described before, and by comparing the two cases I came to the conclusion that the disaster was owing to putting the mother to the buck too soon after littering, as in both cases I did so a fortnight after kindling. What makes me think so is that the symptoms appeared in both cases the very next day after her visit to the buck. Could this have any effect on the milk? My own judgment would have directed me to leave the doe in peace till her young were weaned, and I should have acted so had I not seen it directed to do as I did. I shall not try it again till the young are at least a month old.—CUNICULUS.

MANAGEMENT OF CAGED LARKS.

YOUR correspondent, "A CONSTANT READER," will find the following treatment of service in bringing the "spring bird"—that is, a caught lark, into prime condition.

The cage should be 15 inches long by 10 inches broad and 10 high, and the top covered with black or brown muslin, to prevent the bird injuring his skull when he flies against the top. Six inches in length of the bottom of the cage should be covered to the full breadth with a piece of white clover turf, to be changed, if possible, twice or thrice a-week, the oftener the better, and the rest of the floor of the cage must be covered with fine river sand. Let the cage hang in a quiet side of the room well exposed to the light, and near the ceiling, or at least above the level of the eye.

The staple food should be made as follows—namely, 1 lb. of pea meal, the whole of two eggs, 4 ozs. of lard, and 1 oz. of honey. Place the whole in a saucepan over a slow fire, and keep stirring sharply till it presents a slightly browned appearance, being careful not to burn it. This paste can be kept for a long time by tying it up in a bladder. To one table-spoonful of the paste add one large tea-spoonful of hard-boiled bullock's liver grated fine, and one tea-spoonful of crushed hempseed. Should the bird prove steady on this food he may be further "sprung" with a little of "the singing diet," prepared as follows:—Take the yolk of one egg, the same weight of boiled sheep's heart minced, and a little flour; mix well, tie up in a cloth, and boil for a quarter of an hour. To a small piece of this add a little poppy seed, or malt and lettuce seed, and give the size of a small hazel nut with two or three meal worms daily, and a few small, plump, white oats thrown loosely on the bottom of the cage.—E. HUTTON.

BEES IN BORNEO AND TIMOR.

HAVING recently perused Mr. Spencer St. John's very interesting work on Borneo, published in 1862, under the title of "Life in the Forests of the Far East," I have made notes of several passages relating to the apian aborigines of that magnificent tropical island:—

Speaking of the agricultural pursuits of the "Sea Dayaks," Mr. St. John says—"They obtain beeswax from the nests built on the tapang tree, and climb the loftiest heights in search of it, upon small sticks which they drive as they advance up the noble stem that rises above 100 feet free of branches, and whose girth varies from 15 to 25 feet. Once these pegs are driven in, their outer ends are connected by a stout rattan, which, with the tree, forms a kind of ladder. It requires cool and deliberate courage to take a bee hive at so great an elevation, where, in case of being attacked by the bees, the almost naked man would fall and be dashed to atoms. They depend upon the flambeaux they carry up with them, as, when the man disturbs the hive, the sparks falling from it cause, it is said, the bees to fly down in chase of them, instead of attacking their real enemy, who then takes the hive and lowers it down by a rattan string. The bees escape unhurt. This plan does not appear to be as safe as that pursued by the Pakatan Dayaks, who kindle a large fire under the trees, and, throwing green branches upon it, raise so stifling a smoke that the bees rush forth, and the man ascending takes their nest in safety. Both these operations are generally conducted at night, although the second might be, I imagine, practised in safety during the day."

With regard to the "Land Dayaks" it is stated, that "To the left of the Sirambau are some very fine tapang trees, in which the bees generally build their nests; they are considered private property, and a Dayak from a neighbouring tribe venturing to help himself of this apparently wild honey and wax would be punished for theft." This is the first hint that is

given of bees being considered in any respect as private property, but the following passage would seem to indicate that the domestication of the honey-bee is not altogether unknown in the island:—"During the night, our rest was much disturbed by bees, who stung us several times, and Mr. Low, with that acuteness which never deserts him in all questions of natural history, pronounced them to be the 'tama' bees, the same as he had last seen thirteen years ago among the Senah Dayaks, in Sarawak. About midnight we were visited by a big fellow, who, our guides assured us, wanted to pilfer; but we found next morning that he had come to complain of his hives having been plundered. On inquiry, we discovered the man who had done the deed. He was fined three times the value of the damage, and the amount handed over to the owner."

During one of his adventurous expeditions up the river Limbang, Mr. St. John found a Pakatan named Japer, who accompanied him, a storehouse of information. He had a thorough faith in ghosts and spirits, and told of "many an adventure with them; of the Antus who caused the death of the wax-hunters, by pushing them off the mengiris or tapang tree. When the unfortunate men, from inefficient preparations, as their companions not keeping up a great fire under the trees to stupefy the bees, are so stung as to let go their hold, the natural explanation is never taken; they fly to their superstitions. Japer's nephew saw one of these tapang ghosts, and managed to keep his eye upon him and prevent him pushing him off; he came down without accident, but without any wax. I suggested that he invented the ghost to excuse his timidity, which Japer thought probable. To-day we passed one of these lofty trees bearing above twenty bees' nests, among them four old ones white with wax.* As the country is full of tapangs, in which alone do the bees build their nests, the stories of the great amount of wax formerly procured in this district may be true. Why do the honey bees generally build on one particular tree? Its being the finest in the forest is no good reason; perhaps there is something enticing in the bark. I say 'generally,' because, though I have never seen their nests on other trees, yet I have often come across them in the crevices of rocks." In a subsequent part of his journal of the same expedition, our author says—"I never was in such a country for bees: they everywhere swarm in the most disagreeable manner, and ants and other insects are equally numerous." When on their return and nearly starved, the party had "a very happy find, for while passing under a fine tapang tree we noticed the remains of a bees' nest scattered about, and every particle was eagerly appropriated. From the marks around it appeared as if a bear had climbed this lofty tree and torn down the nest to be devoured by its young below, as there were numerous tracks of the smaller animals around, but whether the comb had been sucked by the bears or not was very immaterial to our men, who rejoiced in securing the little honey still clinging to it."

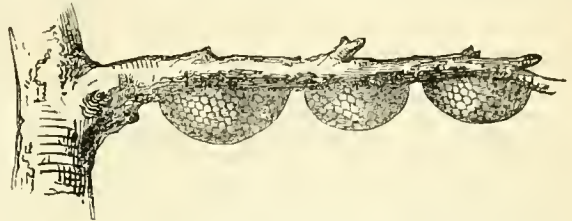
The party appears only once to have fallen foul of a hornet's nest. The encounter and its results are thus described:—"It was in following the bed of the Rawan that I was stung. Notice was given by the guide to leave the direct path, and we all did; but I suppose some one disturbed the hornets, as they attacked me with a ferocity that appears incredible: many flew at me, but two fixed on my arms and stung me through my double clothing. They poised themselves a moment in the air, and then came on with a rush which it was impossible to avoid. The pain was acute, but I saved my face. I tumbled down the steep bank in a moment, and, throwing aside rifle and ammunition, plunged up to my eyes in a pool until the buzzing ceased and the hornets had returned to their nests. Some of my men were also stung; they squeezed a little tobacco juice on the wounds, and they say they felt no further inconvenience. I tried it about an hour afterwards, but it did me no good. I had no idea that the sting of this insect was so severe; my right arm swelled up to double its natural size and was acutely painful; now, on the second day, it is much less so, but as the swelling continues it is impossible to use it much."

That wild bees are exceedingly abundant in the forests and jungles of Borneo may be inferred from the foregoing passages, as well as from the numerous references to parties of native "wax-hunters" which occur in almost every chapter of the work. Although no clue is given by Mr. St. John to the identity of the Bornean honey bee, or any information as to

the manner in which it builds its nest, I am enabled in some measure to supply the deficiency from other sources.

Some half dozen years ago I received from Mr. Charles Darwin, the distinguished naturalist, a few specimens of bees named *Apis testacea* (Smith), together with two pieces of their comb. Although these had been brought by Mr. Alfred R. Wallace, the celebrated traveller and author of "The Malay Archipelago," just published, from the island of Timor in the Eastern Archipelago, I believe them to be the same as those which are indigenous in Borneo, so that there appears little reason to doubt that these are the bees referred to by Mr. St. John. On examination I found them half as long again as *Apis mellifica*, and their brood comb proportionably thicker. They were, in fact, a variety of the magnificent *Apis dorsata*, which is described as flourishing abundantly throughout the great Indian peninsula, from Cape Comorin to the Himalayas, as well as in Ceylon.

Mr. Darwin subsequently introduced me to Mr. Wallace, to whom I am indebted for the following particulars:—"In Borneo and Timor the wax forms an important article of commerce. The combs hang on the under side of horizontal limbs of lofty trees, often 100 feet from the ground.



I have seen three together as above, and they are often 4 feet in diameter. The natives of Timor I have seen take them. They climb up a tree carrying a smoke torch made of a split creeper bound up in palm leaves, and hanging by a rope from their waist. They cover up their body and hair carefully, but their arms and legs are bare. The smoke directed on the comb makes the bees fly off in a cloud as the man approaches. He sweeps off the remainder with his hand and then cuts off the comb with a large knife, and lets it down to his companions below by a thin cord. He is all the time surrounded by a cloud of bees, and though the smoke no doubt partly stupefies them, he must be severely stung. While looking on from a considerable distance a few came down and attacked me, and I did not get rid of them till I was half a mile from the place and had caught them all, one by one, in my insect-net. The sting is very severe. I should imagine that in Timor the dry season answers to our winter, as the drought is very severe, and much of the foliage is deciduous. Eucalypti are the most common trees, and their flowers I suspect supply the bees with their honey. In Borneo combs are placed in a somewhat similar manner, perhaps formed by the same species. The only bee I have seen domesticated in the East is one at Malacca; the natives hang up bamboos and hollow logs for it; but it is, I believe, not a true *Apis*, as it makes clusters of large oval cells of black wax."

I may add that the Timor bee was named *Apis testacea* on account of its colour, which is very light, and is, in fact, the only point in which it differs from *Apis dorsata*. When some years ago I compared the specimens in the British Museum, I became impressed with the idea that those which represented *Apis testacea* were nothing more than newly-hatched and immature specimens of *Apis dorsata*, and so strongly did I urge my views upon Mr. Smith, that I believe I almost induced him to doubt the correctness of his own nomenclature, until he was afterwards assured by Mr. Wallace himself that they were really mature and fully-developed adult bees.—A DEVONSHIRE BEE-KEEPER.

THE BEE-KEEPER'S OPENING SEASON.

THERE is something delightful in the return of spring! It is the season of resuscitated life among thousands of the animal and vegetable world, and will be hailed at such a time by every apian reader of the Journal. So to the spairy we bend our way. A calm sultry day, the 14th of April, like one in July. What a bubbling of excitement and rejoicing! All my hives are presided over by Italian or Egyptian queens, though the outdoor work is still carried on chiefly by the hardworking plodding

* More probably new ones.—A DEVONSHIRE BEE-KEEPER.

Britons, many of which will contrive to spin out their existence even till June, when the whole community in each hive will become one race. Along the range the eye is irresistibly attracted to some few in particular—to the strong and powerful—and especially to a splendid Egyptian located in a straw hive of large proportions, one which would please even Mr. Pettigrew for dimensions. It is the first and foremost in the whole apiary. Its population is something enormous. Even in winter it kept up at intervals a buzzing sound, and nothing seemed to check its onward progress. Its entrance is all excitement and bustle, and crowds of foragers are plying their busy work with extraordinary alacrity.

The bee-keeper is often sadly puzzled to account for differences in condition among his stocks in spring. The closing autumn left them, it may be, in circumstances apparently very much alike. Population and stores seemed amply sufficient. Even early in spring no marked difference is visible; but as trying, testing March (and such a March as last), drags its cold and dreary days along, and when April arrives, we then discover great changes. Here is a hive whose reduced population assumes a lethargic, indolent appearance; there one equally reduced, but whose activity augurs a more hopeful future. We examine the interior, and what do we see? In the former case we may or may not find a queen, but if we do she may be aged or defective, and may not yet have resumed the business of oviposition. In the other case the queen may not be at fault, and it is not unlikely but we may discover two eggs instead of one in many of the cells, showing that her resources are even beyond the requirements of such a limited population. But apart from all contingencies in wintering, or exceptional adverse circumstances accounting for the decrease in bees compared with the populous stocks in proximity, there are other causes which have been at work, and to trace which it is often needful to go a great way back in their history. I have, in a former communication, hinted at the immense advantage of having at the close of the season as much of the youthful element as possible in our stocks, and any circumstance which operates against this desirable state of affairs is to be carefully avoided. The experienced apiarian will accordingly be enabled pretty correctly to predict the future of a hive by the condition and circumstances in which the closing season finds it. If the population is chiefly made up of aged bees, and especially of bees which have had much work, there is great danger lest a protracted winter or a late spring so thin its population as to bring it under the category of a weak hive. For such a stock an early spring is essentially necessary; a protracted one is probably its ruin.

To prove this point, suppose I have some half a dozen experimental hives in my apiary, hives in which I have been rearing queens, though all experiments are hurtful to bees. Well, I join these six into one in autumn. The hive is now immensely populous, and ostensibly it is a first-rate stock for wintering. Not so, however. Its vast numbers are composed chiefly of superannuated, or what will shortly become superannuated bees. These have been engaged in the work of the season, and all experts (to use an Americanism) know how short the summer or working life of a bee is. Often have I marked one-fourth of a populous swarm perish, by reason of the various contingencies to which they are exposed, ere a single bee was hatched, to make up for such a great mortality. Nay, I have noticed the whole brood of a populous hive, which issued from their cradles in July, disappear from the scene in two short months thereafter. August and September-bred bees, however, which have had little or no work, but which enjoy the fruits of their elder sisters' industry, and live in a comparative state of repose—these live on through winter well, look as fresh and active in spring as young bees, and many of them are permitted to give to the community the benefit of their labours in some cases even till June.

As a rule, therefore, a thinly-peopled hive at the season's close is to be discarded as a stock hive, as it reveals the fact that the queen has bred few autumn bees. I myself put great value upon a preponderance of the youthful element in hives intended for stocks. These are the hives which, *ceteris paribus*, lead the van in spring, and give us such bright prospects of future success. Hence the union of condemned stocks in autumn, as a general rule, greatly assists in securing this very desirable object.

Notwithstanding the protracted cold weather we have had in Scotland during March, I still find my own apiary in splendid condition. Young bees are showing themselves in great numbers these fine days, and with a continuance of average weather, the prospects of the season are bright and hopeful.—J. Lowe.

OUR LETTER BOX.

PRESERVING EGGS (—, *Thorton-le-Moor*).—The best method is to take an earthen bread-pan, put at the bottom lime and water enough to cover the eggs, and of a consistency to keep them in the position in which they are placed. For the first layer you will mix just enough to cover them entirely, and to present a smooth surface; as fast as you have eggs ready, mix more lime. It is well to put the eggs in as fresh as possible, and they cannot be packed too closely provided they do not touch. When the pan is full, pour on some slaked lime to fill up, cover the whole, and put the pan in a cool place. We are now using eggs that were preserved after this method last year, and they are excellent for all cooking purposes, and in the absence of better have sometimes done duty for the new-laid on the breakfast-table, without calling forth remark.

SHORTENING HOUNDS' SPURS (*Newark*).—Circulation only extends over a certain length of the spur, the remainder is merely horn, and can be cut through without causing suffering or pain. A small fine saw is the best thing, and when the spurs are over-grown and curved, much may be removed advantageously. We have used for this purpose a saw made with a watch spring.

PREVENTING PULLETS FROM LAYING (*Black Hamburgh*).—There is no method by which a pullet can be prevented from laying when she has begun. If there were, it would not answer your purpose to adopt it. It is too late to think of fattening after a pullet has begun laying, she is too old and hard, and will not make good or tender meat. If, however, you wish to kill, the sooner you do so the better, as she is fatter now than she will be again. A pullet is naturally very fat just before she begins laying; as her number of eggs increases, the fat diminishes. If you kill, fast her twelve hours, and keep her some days, she will then eat well. If your hen appears to suffer when laying these double eggs, take one of her tail feathers, dip it in oil, and pass it up the egg-passage, the egg will then be laid easily. It is very likely she will not continue to lay them.

AYLESBURY DUCKS' BEAKS (*I. N. C. P.*).—All Aylesbury ducklings have faultless bills when young, and till they are some months old. The Aylesbury gravel is not necessary to keep them so. Dirty stagnant water, foul ponds, water that runs off or through peat, all have a tendency to spoil bills. Do not let the Ducks have their full liberty when young. If possible, give them the advantage of running water. When they are older let them go into grass early in the morning, and as far as may be, remove all colouring matter from them.

PIGEON, &c. (*Huddersfield*).—How is it possible for us to give reliable opinions upon such slight statements? The Pigeon was probably killed by a rat. Try giving once daily bread steeped in ale to your drooping fowl.

NEWLY-HATCHED CANARIES DESTROYED BY MICE (*Harry*).—"The mice have killed your birds. I have known them make great havoc in the bird-room. They will attack sick and weakly birds of full growth, I have found them dead, minus wings and legs, and otherwise sadly mutilated. A friend of mine lost, I think, as many as ten in a very short time by their depredations. They will also remove eggs. Only very recently I met with an instance in which an egg was removed from a nest as a precautionary measure, and placed in a small open box on the top of a cage, to which, unfortunately, the mice had access. Where, indeed, do they not find access? Next morning it was gone, and two others similarly located disappeared in the same way. They do not seem to care much about trusting themselves to the tender mercies of a trap when they can find a supply of seed without risk. It is not easy to destroy them entirely, except by a patient and systematic warfare against them. I have found "Battle's Vermin-killer" a most effective agent. If you starve them for a night or two by removing, if possible, all food from their reach, and then bait with a little of the food you intend to use as a medium for their destruction, finally giving a supply of poisoned food, the next morning's result will astonish you. Though you cannot see how they find their way into the aviary, can you not discover the holes from which they come? If so, stop up all but one, and clear the floor of all furniture but a box, which place about an inch from the wall. Enter the room with a light, and immediately close their only retreat, when they will every one run behind the box, and a gentle squeeze will explain matters to them very effectually; this is a most deadly plan. The room from which the eggs mentioned above were stolen was overrun with mice, and it was discovered they came from beneath the floor through various small holes, but principally from the box containing the sliding window shutters. The holes were stopped, the lid of the shutters left open, and a box placed as I have described close to the wall. The first night's hunt gave seventeen, which I was disinclined to believe, till I myself assisted at the massacre of a still greater number. There need be no hurry in the matter. I went round to the cages with my friend, who bait the mice out of cover from seed boxes and other hiding places with a little stick, and allowed them to jump on the floor, occasionally by a skillful application of a slipper killing one or two more impudent than the rest, who put their heads through the wires as if questioning our right to disturb them. A night or two of this work, and a stray cat introduced beneath the floor nearly exterminated the whole colony. If your aviary is not a fixture, can you not place it entirely out of the reach of the mice by hanging it against a bare wall at a height from the ground? Mice can reach strange places, but there are limits even to their hunting grounds.—W. A. BLAKESTON."

GOLD FISH (*Miss G.*).—They must be fed. Give them daily a little raw meat steeped fine.

GREEN GRAPE VINEGAR (*Flora*).—We are told that 1½ lb. of the grapes that are thinned out from the bunches, should be crushed and added to 1½ lb. of sugar to each gallon of water, and yeast added to ferment it. Any of our readers who have a proved recipe will oblige by sending it.

ROMAN CEMENT (*Cuniculus*).—It is compounded chiefly from an iron clay, found near Vesuvius. We know of no artificial imitation of either it or Parker's Cement, which is made from a somewhat similar clay found in some parts of England.

POULTRY MARKET.—APRIL 28.

THERE is a slight improvement in trade, and prices are maintained. The weather has been so favourable for rearing, that we may soon look for an increased supply of early chickens.

WEEKLY CALENDAR.

Day of Month.		Day of Week.	MAY 6-12, 1860.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.	
				Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
6		TH	Meeting of Linnean Society, 8 P.M.	62.4	68.8	60.6	16	26	41	29	47	55	42	46	41	24	3	34	126
7		F	[Roses and Spring Flowers.	60.1	69.6	49.9	18	24	4	30	7	16	3	50	2	25	3	39	127
8		S	Royal Horticultural Society, Show of Pot	62.2	69.5	50.8	18	22	4	32	7	36	3	56	3	26	3	43	128
9		SUN	SUNDAY AFTER ASCENSION.	62.5	69.8	51.2	18	21	4	34	7	57	3	1	5	27	3	46	129
10		M	Meeting of Royal Geographical Society,	62.3	40.3	51.3	20	19	4	35	7	19	4	9	6	23	3	48	130
11		TU	[8.30 P.M.]	62.3	41.0	51.6	19	17	4	36	7	42	4	17	7	3	50	131	
12		W	Meeting of Society of Arts and Royal Microscopical Society.	62.8	40.7	51.7	20	16	4	38	7	11	5	25	8	1	3	52	132

From observations taken near London during the last forty-two years, the average day temperature of the week is 62.1°; and its night temperature 39.9°. The greatest heat was 84°, on the 6th, 1862; and the lowest cold 20°, on the 6th, 1865. The greatest fall of rain was 1.14 inch.

From observations taken near London during the last forty-two years, the average day temperature of the week is 62.1°; and its night temperature 39.9°. The greatest heat was 84°, on the 6th, 1852; and the lowest cold 20°, on the 6th, 1855. The greatest fall of rain was 1.14 inch.

CUCUMBERS.—RIDGE-CULTURE.



As the time is fast approaching for the cultivation of the Cucumber on ridges, a few remarks on its treatment in the open air will, I hope, be acceptable, and produce beneficial results; for though its culture is common enough among professional gardeners, amateurs, and cottagers, I am far from being convinced that it is so well understood by all as to leave nothing worthy of a special paper on the subject.

From what I have observed I shall not be far wrong if I say that two nearly distinct systems of treatment are pursued; the one by the gardener, which the amateur in nine cases out of ten can and does follow, and the other is that of the cottager or labourer. Now, let me notice some of the principal features of the two systems, not only to glean satisfactory evidence as to the most proper and certain mode of culture, but also to see if we cannot better inform ourselves as to the cause of that terrible disease (if disease it is), which for some years past has come upon the Cucumber with the suddenness of an electric shock.

The gardener may be said to possess unlimited conveniences for raising and growing his plants under glass, for hardening-off, and for finally planting-out; he can command plenty of manure and rich soil, with which to form ridges, also the protection of hand-lights to lessen the check his plants receive and to hasten maturity. Under his mode of air-giving, shading, and watering, the plants soon attain proportions quite surprising. The hand-lights, from becoming too small, are set on bricks until the plants are strong enough to take care of themselves, when the lights are taken away and the plants left to the mercy of the elements. After this, mere attention to watering, and occasionally stopping a gross shoot, complete the gardener's system of open-air Cucumber culture.

Now, let me turn to the cottager or farm servant, whose system every one knows must be regulated according to circumstances, and whose means are so limited as to compel him to do without the gardener's conveniences, with a few exceptions as to manure, which I shall presently explain. About the beginning of April he thinks of his Cucumber bed, and collects into a heap such materials as roadside grass, weeds from his garden, horse droppings, wood ashes, &c., and he turns them over several times to decay. About the middle of May in some sunny spot a hole is dug large enough for his requirements, and this heap of decayed matter is pitched into it, covered with a layer of the soil that came out of the hole, and the other portion is laid round it in the form of a ridge. The bed then has the appearance of a dish. The seeds are sown in patches of six or seven, and green boughs are laid across from ridge to ridge to shade the seeds by day and protect them at night. An old tub is filled with water, and placed in the sun to warm, and after the plants have made their third leaf they are daily supplied with water from this, except in very wet weather. As the plants grow, the soil round the bed is used as a mulching to encourage the

surface roots. The exceptions before alluded to are these: In different parts of the country, and especially in Kent and Sussex, it was at one time usual for farmers to hire their men servants at so much per year and a Cucumber bed, and the Cucumber being a saleable commodity in these localities, this offer was considered too good to be rejected. The men, therefore, have the use of a heap of farmyard manure amounting sometimes to as much as fifty or a hundred cartloads; this is spread out to the thickness of 5 or 6 feet, which, I am told, makes a bed large enough to grow from fifty to sixty dozen Cucumbers. All other particulars as to culture are the same as with the cottager.

Having been called upon some time back to grow Cucumbers extensively on ridges, I tried both systems with results so convincing as to decide me without hesitation in favour of the cottagers' plan, and for these reasons:—It is purely open-air culture from first to last; his plants are raised and grown on the spot where they are to fruit, and not having a rich soil, their growth is of that hardy nature that changes of temperature are not so injurious to them as to these more tenderly reared. On the other hand, the gardener's open-air culture does not begin until the hand-lights come off, when the Cucumber vines and foliage, owing to his liberal treatment, are vigorous and tender, therefore more liable to injury. The next reason, from the very nature of things, is the most important, and though I think the adoption of the practice has been forced upon the cottager more from necessity than from knowledge of its importance, in this practice, according to my opinion, lies the whole secret of success in out-door Cucumber culture. The cottager makes his bed under ground, and so provides for the roots an unlimited space in which they can ramble in search of food, besides securing for them a moist, warm, and regular temperature; his beds, too, not unfrequently continue in bearing until autumn. We gardeners, on the contrary, make provision for the roots above ground, and although we know, or ought to know, that the roots of the Cucumber ramble far, we confine them to a narrow ridge, which, besides being subject to climatic influences, is soon pierced by the roots in every direction; the supply of food is then suddenly cut short in consequence of the want of space in which to collect it, and the first powerful sunshine prostrates the finest foliage. This is what some call a disease, but I fail to see it in that light when another bed growing alongside on the cottagers' plan is entirely free from these appearances, yet such has been my experience. I am, therefore, inclined to think the gardener's treatment is too liberal, and that it is better to provide a commoner but more substantial diet, and pursue a more legitimate system of open-air culture. The result, I think, would be early in autumn a healthy Cucumber bed, which is seldom seen, except in a cottager's garden. Of course I am aware that it is not in every county that purely open-air culture can be practised, but at all events it is in everyone's power to give the plants a less rich soil and encourage root-extension, for here is where I think the principal cause of the failure lies.

There is one plea which gardeners may put forward in

favour of their mode of treatment—viz., that they can secure a crop, even if a small one, in two-thirds of the time that the cottager does. I have nothing to say in reply beyond stating my opinion that a fast life among plants of any kind is generally a short and dangerous one, and that it renders the ridge Cucumber more susceptible of disease and death.—THOMAS RECORD, *Lillesden Gardens, Hawkhurst.*

SALVIA SPLENDENS, AND OTHER SPECIES OF THE GENUS.

At a time when the cast-off plants of the conservatory are likely to receive indifferent treatment, it would be well to look after one or two species whose beauty for the season, it is true, may be over, but which with a very small amount of attention may be serviceable again next year. Of this class of plants the *Salvias* are perhaps the most really useful, and the first on the list is *Salvia splendens*. If moderate-sized plants of this be planted in rather poor ground, it is very likely they will just grow sufficiently to be taken up in the autumn well set with bloom buds in all directions. I have often turned out old plants of it and *Salvia gesneriflora* and *Reedii* in some vacant spaces in a shrubbery, where they have enjoyed the full sun, and have just grown enough to make up for the partial cutting-down they had prior to being planted out, or they might even somewhat increase in size; but it is better to have some smaller plants to come on, and to throw the very largest away. I do not, however, recommend the planting of *S. splendens*, if very small, in rich ground. It is true the plants there grow fast enough, but they do not remove well, and the wood is so very brittle that the chances are that many of them will be hopelessly broken in the taking-up. The same may be said of the other species. I therefore prefer rather poor ground, and, as before stated, some openings in a shrubbery afford very good sites for plants nearly as large as the shrubs themselves. Other places may do as well, perhaps, but avoid a too rich border.

I must remind my readers that *Salvia splendens* requires taking up before frost sets in, as no plant that I know is more sensible to it; but it removes very well if prepared beforehand by the spade being run down just as far from the collar as the side of the intended pot will be. This ought to be performed a fortnight or so before the plant is taken up. The other *Salvias* may be treated the same, and the pots being brought to the place where the plants are growing, the transfer from the ground to the plants' winter quarters need not cause such a sacrifice as is often the case when they have to be removed to the potting bench, losing a large portion of the ball at every change.

Although the preceding treatment is advised with regard to established plants of *Salvia*, it is not necessarily confined to them. I have occasionally treated *Coronillas* in a similar manner, and by planting them on a dry sunny knoll have had them showing flower beautifully in the autumn, which is the time at which they are wanted, as *Cytisus* and the numerous *Acacia* family come into flower in the spring. In the case of *Coronillas* care must be taken that they have not suffered from undue exposure in the cold spring months, as a forced plant turned out of doors in the cold east winds of the early part of April has but a poor chance to live, let alone flourish, and perfect its growth early in the season. I would not advise the experiment here described to be tried on such plants—at least, success must be very uncertain. With the *Salvias*, however, there is more hope, and their planting-out cannot be too strongly recommended to all who are anxious to lessen the amount of watering in the dry summer months—a matter of no little importance to many with whom water and the means of distributing it are not too plentiful.—J. ROBSON.

TENDER ANNUALS.—No. 3.

SENSITIVE PLANT (*Mimosa sensitiva*), is a pretty-foliaged free-flowering plant with light pink flowers, but its chief merit consists in the leaves falling when touched. It is an old favourite. It attains a height of 2 feet, and in some cases 3 feet under good cultivation.

The seeds should be sown early in April, in a compost of two parts sandy fibrous peat, and one part loam, with a free admixture of silver sand. Before sowing the seed the soil should be made fine, but for the plants, &c., it is best rather rough. The pots, after the seed is sown, should be plunged in a hotbed having a bottom heat of 75°, and a corresponding top heat. The soil must be kept moist, and the plants near the

glass, and a moderate amount of air ought to be given so as to keep them stiff. When they are 2 or 3 inches high they should be potted-off singly in pots 2 or 2½ inches in diameter, placing them up to the seed leaves, and should be returned to the hotbed and shaded for a time until they become established. After that they cannot be kept too near the glass, nor have too much air, so long as a temperature of from 60° to 65° at night, and from 70° to 75° by day without sun, and of 80° or 85° with sun is maintained. The plants should be well supplied with water, but avoid keeping the soil saturated, not giving any water until the soil becomes dry, but watering before the foliage flags. A moist atmosphere should be maintained, and a gentle sprinkling overhead morning and evening will be of advantage. Whenever the pots are full of roots the plants should be shifted into pots a size larger, and before the roots are very much matted, and this should be continued until the plants show for bloom, when they should have their final shift. They may be grown fine in 6 or 7-inch pots, but for large plants 8-inch pots are not too large, good drainage being provided. To keep the plants erect the pots should be frequently turned round, and any irregular growths may be shortened or stopped so as to secure a close pyramidal form, which is, perhaps, the best; and if large plants are required the flowers should be picked off, and weak liquid manure given at every alternate watering, but not until the pots become filled with roots.

Whether we look upon Sensitive Plants as curious, or as having fine *Acacia*-like foliage, they are deserving of a place in every stove. They require a stove temperature, though they succeed tolerably well in a greenhouse, after being sown and kept growing in a hotbed until of good size, and then removed to the warmest part of the greenhouse, where, however, they soon lose their sensitiveness, which increases with heat and decreases with cold.

THUNBERGIAS.—These form fitting companions to the tender-flowering annuals before named, and are very desirable for suspended baskets, vases, and for training to pillars and low trellises in the conservatory; also for growing in pots, when trained to stakes as pillars or cones, or to fancy wirework in the form of globes, and in other shapes. They are climbing plants, and mostly have yellow flowers, though there are some with white flowers. The principal kinds are *Thunbergia alata*, yellow, and sometimes the eye of the flower is brown or black—it is the best sort; *T. alata alba*, white, with a brown or black eye, very pretty; *T. aurantiaca*, orange, black eye—only a form of *T. alata*, better coloured, and having the black eye, which in the true *T. alata* is absent; indeed, all the kinds in the seed catalogues are only varieties of *T. alata*, as *Esleri*, white; *intusa candida*; *sulphurea*, flava, yellow; and *Frieri*, white. All are fine, and with other tender annuals, when well grown, render the greenhouse and conservatory quite gay during July, August, and September, when flowering plants are scarce, as these are either in other quarters, or undergoing a course of treatment necessary to secure their flowering in winter, spring, or early in summer.

The seeds should be sown early in April unless early flowering be desired, when they may be sown early in March. A bottom heat of 70° or 75° is necessary, and 80° or 90° will not be injurious. Use a compost of two parts turfy loam, and one part sandy fibrous peat with a free admixture of sharp sand. When the plants have two pairs of leaves, counting the seed leaves, pot them off singly in small pots, and return them to the hotbed, keeping them close, moist, and shaded until established, then expose them fully to light and air, and keep them near the glass. Never allow the roots to become very closely matted together, but shift the plants into pots a size larger when the roots reach the sides, and shift again until they are in 7 or 8-inch pots, mixing with the above compost (which should be used in a rather rough state and on no account sifted), one part of old cow dung, and providing good drainage.

The plant should have the point of the shoot taken out when it has made two pairs of rough leaves, or if the plants are weak take the points off immediately above the first joint, and this will cause side shoots to be produced, and an increased amount of vigour. The shoots must have their points taken out at the second or third joint as often as they are produced, and every flower should be taken off as it appears. To have the plants strong the atmosphere must be moist, and they should be syringed overhead morning and evening so as to keep down red spider, their great enemy, and be plentifully supplied with water.

Stopping must not be practised after the plants are in their

blooming pots, and these they should have when the 6, 7, or 8-inch pots become filled with roots. Pots 9 or 11 inches in diameter are large enough for good specimens. Add to the compost at the last potting one part of old lime rubbish, so that the soil will be composed of two parts of loam from turf, one part sandy fibrous peat, one part old cow dung, and one part lime rubbish, the whole well mixed and used rather rough. Up to this period of their growth, the plants ought to have had a hotbed where there is a temperature of from 60° to 65° at night, and from 70° to 75° by day, or 80° to 85° with sun and abundance of air.

The stakes or the wire trellis necessary for training the plants should be put in after the last potting, and training must at once begin. I do not care for very tall plants, but compact dense masses, hence the stopping; but if tall plants are wanted, more than one stopping must not be given. The plants, after being shifted into their blooming pots, may be placed in any light airy house where they can be kept close to the light, allowing them room to grow; and give air plentifully, and a sprinkling of water overhead morning and evening. Maintain a moist atmosphere by frequently sprinkling the paths, walls, and other available surfaces. A better place than any other is a cold pit, where the plants should be continued until they are coming into bloom, when they may be moved to the greenhouse or conservatory. They should, after the pots become filled with roots, have liquid manure at every alternate watering, and that will tend to keep away red spider, give greater vigour, and increase the size of the flower, the colour being dependant on their exposure to light, of which they cannot have too much.

For baskets the plants should be put in them when of a size fit for placing in the blooming pots, and the basket ought to be lined with moss, and filled with the compost used for the final potting. Care should be taken to keep them well supplied with water, and if this cannot be done by means of the watering pot, dip the basket in a vessel of water every evening for a few minutes, and syringe twice a-day with soot water.

For trellises, the plants should only be stopped once, and ought to be planted out when they need the third potting. Pursue the same treatment for those that are required for vases, though for the latter purpose the stopping may be continued longer. To preserve the plants longer in beauty, remove the pods as the flowers go off.—G. ABBEY.

FLOWER SHOWS.

"Flower shows do not pay," is the melancholy refrain we hear from time to time, and about which we see so constantly so many articles written and so many suggestions made. I dare say all will remember the story told of that miserable king of ours, Charles II., propounding to the wisacres of his profligate court why, if you put a live fish into a bucket of water, the weight was in no way increased. They set to work to guess and shake their heads and look wise, until some one thought he would try first, and of course found out that the premises of the king were wrong. Now, I do not at all think that the various writers who have given us their opinions on this subject are not quite so wise as I am—nay, I think them a great deal more so; but I also think they have done wrong in taking the premise for granted, and, starting on the idea that flower shows do not pay, they have arrived at varying conclusions as to the way to make them do so. I am not at all prepared to give in to this axiom, and not being of an imaginative turn of mind, prefer looking at the whole subject in a very downright, it may be dogged, sort of way, and will therefore endeavour to clear away what I believe to be some of the mist which prevents folks from seeing clearly in this matter.

What is meant by saying flower shows do not pay? Is it this, that the receipts at the doors do not cover the expenses of the day? for if so, I contend that is not the way to look at it. I take the three great metropolitan purveyors of shows—the Royal Horticultural Society, the Royal Botanic Society, and the Crystal Palace Company. Now, it is quite evident that in the case of the two Societies it would be unfair to look at the receipts on the days of show as all that is to be put to the credit side of the account. The one Society numbers 8000 Fellows, the other 2500, and I should like to know if to-morrow they were to announce that they would discontinue their shows how many of these would continue as Fellows. Are not many of them induced by the privileges offered to them on show days to become members? It is all very well to talk of the love of science and floriculture, and that sort of thing being enough

to induce people to subscribe, but it is not. There is, perhaps, a tithe of the Fellows who may be so influenced, but I question if it is more. With regard to the Crystal Palace, their flower shows *do pay*, but then it is hardly fair to take it as a ground of argument either *pro* or *con*. The place is so exceptionally good, the other accessories of the Palace so attractive, and the visitors so independent of weather, that we must put its shows out of court. Coming from the metropolis to the country, we must look at it in the same way. I do not know of any provincial society which professes to expect that the receipts at the door will cover all expenses. The plan generally is to start a society, to induce a certain number of persons to subscribe, to offer them certain privileges in the way of tickets, and then to look for a substantial addition to the funds on the show day.

But suppose we take for granted (under protest) that flower shows do not pay, let us see the reasons which are adduced for this.

1. "There are too many of them." There are, unquestionably, for the peace of the exhibitors, who are hurried about from post to pillar, and who never seem to get breathing time when once the fit is on. This is telling on them. Messrs. Turner, Bailey, Fraser, and others, whose productions have been the ornament of our shows have withdrawn, and I fear more will follow, but as far as the company is concerned, I think not. Look at the enormous population of London. See how utterly separated from one another the different quarters of the great city are. Why, with the exception of a few well-known faces, you see a set of people at Kensington entirely different from those at the Regent's Park; and, again, totally different at the Palace, and, therefore, I am led to the conclusion that they do not interfere with one another; and it may be adduced as a case in point that when the Alexandra Park at Muswell Hill was projected, while many objections were made, I never heard it advanced that it would injure the Crystal Palace. On the contrary, it was said that the north side of London ought to have a palace for the people as well as the south; and so I fancy that the west, and north, and south of London might very well each maintain their flower shows, and I do not see why the other point of the compass should be left out, and the east of London not maintain its flower shows as well.

2. It is maintained that "the great sameness of flower shows and their want of artistic arrangement tire people out, and that hence the shows are not so well attended as formerly." The first question I would ask is, Are they worse attended? Given a fine day at the Regent's Park in either May or June, and you will bring, I believe, as many people together as ever visited Chiswick in the height of its glories; and, moreover, when such a statement as this is made, it is, I think, quite forgotten that by far the greater number of those who attend flower shows never see or care to see the flowers at all. I have purposely stood at one of the Botanic days in front of the tent entrance, where I could command the sweep of the broad walk leading to the main entrance, and have been amused beyond measure to see the crowds of people who never enter the tent at all, but turn aside at once to the band and ices; in fact, they come to see and to be seen, and whether it be a flower show, or a rowing match, or a horse race, matters but little to them. The Regent's Park, or Mortlake, or Epsom are only places to air the last new love of a bonnet, or see the very latest achievement of Madame Sevilly's, while their male companions affect that disregard of "all that sort of thing." I do not deny that some alteration is required about flower shows, such as restricting sizes of plants and other arrangements, of which more anon; but I question very much whether this would have any perceptible effect on the attendance. It would be more agreeable to a cultivated taste, they might more commend themselves to those who already enjoy them, but I question very much whether the treasurer's account would be much profited by it.

3. "That this sameness is so great, that one gets thoroughly to know not only the exhibitors, but the plants they will exhibit, and hence people will not come." This is perfectly true as to the first point, but it is after all the result of marvellous skill in culture. You may search the world over, and you will never see anywhere such specimens of stove and greenhouse plants, Azaleas, Pelargoniums, and pot Roses, as are to be seen at our metropolitan shows; and it is perfectly manifest, that unless a new exhibitor becomes the purchaser of some of these large plants, it is impossible for him to compete with these collections, and hence the competition is confined to a few persons, who can afford the expense that it entails. And I

see but one remedy for this—before another season do away with all these enormous and overgrown things. Which is preferable as an object of beauty, a pot Rose in a 13 or 16-inch pot, with a whole forest of stakes to uphold it, and every bloom tied to its own particular stick; or a plant of the same variety in a 6-inch pot, with six or eight good blooms, and clean and healthy foliage? I am sure the answer of nine out of ten persons would be, The latter of course. But granted all this, I believe this only appeals to those who have a taste and love for flowers. I hope to return to this subject next week, as I am sure it is one well worthy of the consideration of all lovers of horticulture.—D., Deal.

RHODODENDRONS, AND SOILS FOR THEM.

DURING the past year several instances were brought under my notice of Rhododendrons suffering less during the extremely hot, dry weather, when growing in a mixed soil, than where they were in a deep bed of peat. In many cases where they were in beds of gravelly shingle, such as some persons would consider unfit for any shrub, they flagged less in the hot weather than in prepared beds of good peat 15 inches deep.

If I had to form borders for Rhododendrons, even if plenty of peat were to be had, I would prefer mixing the soil of the border with from one-half to one-third of good healthy loam, and if from an old pasture of deep soil so much the better, provided it were not chalky. Loam mixed with peat forms a firmer, more solid compost, far less liable to be affected by continued hot and dry weather, than peat alone. When Rhododendrons generally retain their leaves for more than one year, it is an evidence that they are feeding in something that suits their nature well; but to speak of peat without any qualification as to what it was produced from often greatly misleads. In some districts, what I have known to be called peat was neither less nor more than a black sour substance, which had been dug from a low marshy place, often more or less impregnated with iron, which is always detrimental to vegetation, and Rhododendrons are no exception in this respect. I have also seen peat dug from solid banks in pieces of the shape and size of a large brick, in order to be dried for fuel. This, likewise, is not suitable for Rhododendrons. I have also seen it dug from hard benty commons, requiring a strong man with a sharp spade, and a smart stamp of his foot, to send the spade through the upper coating of bent, and a second stamp of the foot to send the spade 6 or 8 inches down. This would be all the depth of the peat, it resting upon a white pebbly bottom. Such peat takes years to decay, being full of fibrous vegetable matter, often as tough as Willows. I have often used peat of this description from Putney Heath and Wimbledon Common, and I have found that it suits Rhododendrons well, and will be none the worse of having one-third good healthy loam well mixed with it previous to use. I have used peat that had every appearance of having resulted from the accumulation of decayed Oak leaves, and the common Bracken or *Pteris aquilina*. I know a small hill of from twenty to thirty acres in extent, consisting of white sand, but not quite so sharp as the celebrated Reigate sand, and one side of the hill is covered with Oak and *Pteris aquilina*. Here, where water could exercise no influence in the formation of the peat, as the sand underneath affords ample drainage, there is good peat, the accumulation of many centuries, and excellent for Rhododendrons, especially if a third part of loam be added by way of giving it substance, as in many cases it is a little open and spongy in texture.

I have also been where the peat was obtained from places in which the common Heath grew very freely, and to a great length, and I have seen the peat from 8 to 12 inches deep, and of a close black nature, without any fibre, excepting a few inches near the surface. Under such peat there is in general, a "pan," at from 6 to 18 inches deep, and in some instances deeper. This pan is composed of a blackish layer, more or less thick, but generally very injurious to all kinds of vegetation, and water will scarcely pass through it, hence the moors where it occurs usually have water on their surface during winter, and, therefore, the roots of whatever may be growing on them decay. Peat taken from such places is seldom of any service, and Rhododendrons will not root into it very deeply, as it soon becomes a compact black mass of soil.

Whatever kind of peat we may use, it is always well to mix a good quantity of sand with it, if there is none in it naturally, as Rhododendrons are very impatient of water becoming stagnant about their roots.

From the compactness of the roots, and the multitude of

their fine thread-like feeders, Rhododendrons are amongst the easiest shrubs to remove of any I know. If properly treated during the first few years of their growth—that is, if they have been removed a few times in order to check the formation of long spreading roots, and if they have been planted in a suitable compost, they will, as a rule, soon form very large, compact balls, which may be moved with the greatest safety to any distance. No person need be under the least apprehension as to re-arranging Rhododendron beds and borders during the proper season for such operations.

Where peat cannot be had without incurring great expense, leaf mould is often substituted. I often wonder that Rhododendrons are not far more extensively planted than they are in place of the common Laurel. They are not so apt to run up high or become naked at the bottom, and it ought to be generally known that plants of the commonest sorts three or four years old, can be obtained in many of the provincial nurseries at nearly the same price as common Laurels. This, of course, applies to those nurseries where the natural soil suits the Rhododendron.—G. DAWSON.

CUTTING-BACK UNSHAPELY APRICOT AND PLUM TREES.

I WISH to recommend a practice which I have adopted with great advantage for several years. It is akin to turning misfortune to a good account, and helps to mitigate the vexation that some may experience through many of their trees being destitute of fruit. For pot and standard trees in orchard houses it is particularly applicable. Under the best management trees grow beyond bounds; they grow too large, lanky, or unshapely, and in pruning them in winter—the generally preferred time—the bearing shoots being all at the extremities, one is generally unwilling to cut back sufficiently hard, as by doing so the crop of one year is most certainly sacrificed. I speak of trees which, although only allowed to grow 2 or 3 inches a-year, yet in the course of ten or twelve years extend a long way. Now, if any such Apricot or Plum trees there be which have, unfortunately, shed their fruit, although they were full of blossom, and there are a good many this year, I simply recommend cutting them back into shape, having no regard to the foliage that may be on the trees at the time. They may be cut back, as in midwinter, into the wood of twelve years ago, and they will then break out again as freely as a Thorn hedge pruned in midwinter. Peaches do not so readily break. It is astonishing, however, how well the Apricots do. By this means old straggling shoots and unshapely trees may be quite renovated, and made as shapely and handsome as before, and this without the sacrifice of a season's crop. It is the same practice applied to fruit trees which I also adopt with regard to Lilacs, Ribes, &c. If these are pruned in winter, there is so much less of flower, but if pruning is done immediately after flowering the plants are again in condition to flower the following season.—ARCHAMBAULD.

PELARGONIUM CONGRESS.

MANY of the readers of THE JOURNAL OF HORTICULTURE will be glad to hear, that the special Pelargonium Show that is to take place at the Royal Horticultural Society's Gardens on the 22nd inst., at Kensington, is likely, both as regards specimen plants and new varieties, to far exceed any ever before held; and as there are thousands of amateurs and raisers of new varieties, many undoubtedly possessing great merit, they should now take the opportunity of comparing them with older varieties, in order to ascertain their true value, as compared with the best kinds in cultivation.

The sum of £5 has been subscribed to be offered as a prize for the best treatise by an amateur on their cultivation, the paper to be read in the Council-room at eleven o'clock, when a most valuable and interesting discussion is expected to follow, as some of the most experienced growers will, no doubt, be present. As it is well known that a few cultivators grow these most interesting plants almost as easily as the ordinary Tom Thumbs, it is to be hoped that the secret of their successful management will now be made public amongst growers, so that amateurs generally may be able to cultivate these ornamental-foliaged plants with less difficulty in future. All persons who are interested in this subject, and who can throw any light upon it, are respectfully invited to attend.

I have not the slightest hesitation in saying that both

Tricolor and Bicolor Pelargoniums will in future be far more extensively used than hitherto, both in winter and summer, for they have been shown in fine condition as late as November, and Mr. W. Paul used them extensively with his spring flowers in March this season, at Kensington.—H. CANNELL, *Woolwich*.

PLANTS IN FLOWER DURING APRIL.

April 3. <i>Viola montana</i> <i>Corydalis bulbosa</i> <i>Dielytra formosa</i> <i>Adonis vernalis</i> <i>Aucuba-leaved Daisy</i> <i>Cerastium tomentosum</i>	April 15. <i>Korria japonica</i> <i>Erysimum Peroffskianum</i> <i>Silene pendula</i> <i>Triteleia uniflora</i> <i>Narcissus triandrus</i> <i>Epimedium alpinum</i> <i>Myrica gale</i> <i>Cydonia japonica</i> <i>Double-blossomed Cherry</i> <i>Eucynopus latifolius</i> <i>Cerasus laurocerasus</i> <i>Mahaleb</i> <i>Viburnum tinus</i> <i>Acer barbatum</i> <i>Berberis dulcis</i> <i>Darwinii</i> <i>aquifolium</i> <i>Betula populifolia</i> <i>Buxus myrtifolia</i> <i>Acer saccharinum</i> <i>Linum flavum</i> <i>Potbergilla aliofolia</i> <i>Acer Pseudo-platanus variegatum</i> <i>dasycarpum</i>
" 7. <i>Fritillaria melagris imperialis</i> <i>Gentiana acaulis</i> <i>Convallaria majalis</i> <i>Muscari botryoides</i> <i>Koniga maritima</i> <i>Narcissus</i> <i>Orobis vernus</i> <i>Phlox verna</i> <i>Aubrietia purpurea variegata</i> <i>Arabis lucida</i> <i>Primroses, double</i> <i>Draba aizoides</i> <i>Phlox frondosa</i>	" 15. <i>Epimedium alpinum</i> <i>Myrica gale</i> <i>Cydonia japonica</i> <i>Double-blossomed Cherry</i> <i>Eucynopus latifolius</i> <i>Cerasus laurocerasus</i> <i>Mahaleb</i> <i>Viburnum tinus</i> <i>Acer barbatum</i> <i>Berberis dulcis</i> <i>Darwinii</i> <i>aquifolium</i> <i>Betula populifolia</i> <i>Buxus myrtifolia</i> <i>Acer saccharinum</i> <i>Linum flavum</i> <i>Potbergilla aliofolia</i> <i>Acer Pseudo-platanus variegatum</i> <i>dasycarpum</i>
" 12. <i>Alyssum saxatile</i> <i>Corydalis alba</i> <i>Hesperis matronalis</i> <i>Auricula</i> <i>Dielytra spectabilis</i> <i>Narcissus maximus</i> <i>Primroses, single</i> <i>Phlox alvaricata</i> <i>Helleborus strorubens</i> <i>Anemone spionum</i> <i>Narcissus bicolor</i> <i>Epimedium rubrum</i> <i>Wallflowers</i> <i>Polyanthus</i> <i>Phlox decussata</i> <i>Ruta graveolens</i> <i>Ranunculus amplexicaulis</i> <i>Trichonema colummæ</i> <i>Asarum europæum</i> <i>Trillium grandiflorum</i> <i>Corydalis intera</i> <i>Tritoma nvaria</i> <i>Tulips Rex Rubrorum, Duc Van Thol, and Yellow Prince</i> <i>Epimedium grandiflorum</i> <i>Asperula odorata</i> <i>Anemone nemorosa</i> <i>Acer rubrum</i> <i>Cornus florida</i> <i>Cydonia japonica alba</i> <i>Daphne pontica</i> <i>Fraxinus excelsior</i> <i>Tussilago fragrans</i> <i>Epimedium sulphureum</i>	22. <i>Deutzia gracilis</i> <i>Calendula officinalis</i> <i>Azalea pontica</i> <i>Primula denticulata cortusoides</i> <i>Saponaria calabrica</i> <i>Thuja Warreana</i> <i>Rhododendron caucasicum</i> <i>Saxifraga umbrosa</i> <i>Rosmarinus officinalis</i> <i>Andromeda axillaris</i> <i>Polygala chamaebuxus</i> 23. <i>Ruscus hypoglossum</i> <i>Salix helix</i> <i>Spartium scoparium</i> <i>Double-blossomed Furze</i> <i>Cherries</i> <i>Climus montana fastigiata</i> <i>Saxifraga cordifolia</i> <i>Veronica syriaca</i> <i>Pearberries</i> <i>Pears</i> <i>Apples</i> <i>Plums</i> <i>Heuchera glabra</i> <i>Silene pendula</i> <i>Erica carnea</i> <i>Nemophila insignis grandiflora</i> <i>Malcomia maritima</i> <i>Igibes grossularia</i> <i>Currants</i> <i>Crocuses</i> <i>Lunaria biennis</i> <i>Rhodiola roses</i> <i>Daphne cneorum</i> <i>Hyacinths</i> <i>Podophyllum peltatum</i> <i>Iberis sempervirens</i> <i>Sanguinaria canadensis</i>
" 15. <i>Acer Pseudo-platanus</i> <i>Vinca major minor</i> <i>Viola lutea tricolor odorata</i> <i>Arabis variegata</i> <i>Pæonia Moutan</i> <i>Silene rubella</i> <i>Aubrietia Campbelli</i>	

—M. H., *Acklam Hall, Middlesbrough-on-Tees*.

AUCUBA FERTILISATION.

"A. C." has evidently mis-read my article on the Aucuba; on again referring to it he will find that in every instance the males flowered before the female, and that in one instance where the male blossoms were destroyed by frost before the appearance of the females, the latter, nevertheless, were fecundated and bore fruit, which M. Carrière partially accounts for by saying, "Might it not be with the Aucubas something analogous to that which takes place with certain plants, nuts for instance, the male flowers of which expand two months, sometimes more, before the female flowers, and which, nevertheless, are always fertile?" "A. C." seems to have understood that the females bloomed first, and to think that "after the fall of the petals, berries are apparently found precisely the same as if fecundation had been effected, and for weeks they retain a healthy appearance," during which period he presumes they are susceptible of fertilisation. This is altogether an erroneous impression, even should the females bloom before the males, which they do not, as I venture to assert that the vitality of no pistil lasts "for

weeks," but in most cases only for hours, and even minutes, and where the pistil is absent no other part is susceptible of fertilisation.—GULIELMUS.

NEW GOLDEN COLEUSES.

The value of the Coleus for ornamental purposes is well known, whether the object be the decoration of the stove, or the ornamentation of the dinner-table, and they have the additional merit of being grown easily.

Many of the varieties recently offered are decided acquisitions, their colours being of the richest, embracing many shades of glowing red, and rich dark crimson. The following varieties are doing well with me, and as they are quite distinct from the older sorts, they are all the more valuable:—

Albert Victor.—The centre of the leaves bronzy red, with a very broad gold margin, and on the extreme margin a narrow red line. Very free in growth, and of good habit. While showing it to a gentleman to-day, he said, "Every leaf is a bouquet of itself."

Baroness de Rothschild.—This variety is much like the preceding, the only differences which I see are, that the foliage is much longer, and deeper in colour. This is the gem of my collection.

Princess Beatrice.—The leaves are of a golden green hue in the centre, marked and partially veined with crimson; the edge is also marked with a belt of crimson. This is a very beautiful variety, and very distinct.

Princess of Wales.—I very recently saw this variety exhibited at the gardeners' Show, at Maidstone, but it is not so distinct or so good as Princess Beatrice.

Telfordii aurea.—I have grown this variety in a brisker heat, I have tried different soils, but have not succeeded in making it equal *Plectranthus concolor*.

The season for bedding-out is just commencing; we shall then be able to prove the value of the new Coleuses as bedders.—F. P. L.

MISS WATSON TRICOLOR PELARGONIUM.

With regard to the observations of your correspondent "H. B.," on this plant, I have only to say that my notes were from personal examination. When the plant was distributed Mr. Watson politely sent it to me; it was grown under precisely the same conditions as the other varieties I named in my notes, and at the end of the season I came to the conclusion there stated. At the same time I must say that the opinion I gave has been confirmed by that of many others. Having seen lately the finest collections of these beautiful plants in the kingdom, I hardly think a pilgrimage to St. Albans would be worth while. Should I be in the neighbourhood I would certainly pay Mr. Watson a visit, and I would ask your correspondent to believe that I do not claim infallibility, and my estimate may be wrong, but it is given simply on the data I have named.—D., *Deal*.

PLANTING PEAR TREES.

It is a very great mistake to think, as many gentlemen do, that Pears, or in fact any sort of fruit, will do well enough if planted in good garden mould, without any additions being made thereto. No doubt tolerably good results attend the planting of them in this way in many places, but there can be little doubt that much of the after-disappointment and failure of fruit crops is to be attributed to the want of the proper formation of borders. Where tolerable results are obtained without the formation of good new borders, it is an evidence that the Pear suits the locality, and that if new borders on a good principle had been made, fruit of the very highest quality would have been the result.

In the making of fruit borders, the first thing to be attended to is the drainage, which ought to be complete; and for this purpose I would recommend a drain of at least 3½ feet in depth to be made every 15 to 30 feet, according to the dampness or dryness of the locality. If a fall of 1 in 20 feet can be obtained, so much the better; and these drains should run into a main drain near the Box, to be carried off to the nearest place of discharge. Where the rock is to be got at a depth of 3 or 3½ feet, as we have it here, the drain-tiles may be laid thereupon, and with such for the bottom it is quite unnecessary to concrete or flag in any way; but where a cold deep subsoil exists it would be very advantageous to do so, and place the tiles upon it.

Upon this may be added 9 inches of good rough stones, or bricks broken up with a hammer, which will leave about 2½ or 3 feet for the soil.

We shall premise that the required quantity of soil has been obtained from a good old pasture, and been put up into a ridge for a few months. The best soil for the Pear is a good rich mellow loam, not too light, but rather inclined to be heavy. This having been obtained, let one load to at least every eight be added of the best stable or farmyard manure, with charcoal or wood ashes in considerable quantities, as well as a good addition of crushed bones, where good fruit is more an object than the expense incurred. Let these all be turned over once or twice to get thoroughly incorporated, after which the soil may be placed in the border after a layer of green turf has been put therein, to prevent the soil from running at once down through the rubble. This operation completed, the planting of the trees may be proceeded with at once as already directed; and I may here state that a considerable gain is effected if the trees can be procured and planted about the middle of October, or even earlier, before the leaves fall. In the case of trees, however, which have to come a long distance, this would be impracticable, as they would become heated upon the journey, and consequently much injured.

We now come to speak of the distances which ought to be between the trees at planting. This will depend entirely upon the mode of training and the stock used for grafting. If the Quince has been used, and the trees are intended for pyramids, the distance need not be more than 12 feet, or 15 feet at most. If on the Pear stock, the distance ought not to be less than 18 feet if intended for border lines; and if intended for an orchard plantation even more will be necessary, say from 24 to 30 feet, according to the size they are to be allowed to grow. If the trees are to be planted against the wall, the distances in this case will be regulated by the height of the wall as well as the stock used. For a wall of 8 feet in height the Quince will answer very well, and the trees may be planted every 12 to 14 feet. Where the wall is from 10 to 12 feet, or higher, the Pear will suit better as a stock than the Quince, as it will grow quicker and fill up the space sooner. For a wall 12 feet high, 18 to 20 feet is a good distance to plant, while 20 to 24 will be better where the height is 15 or 16 feet. It is seldom that walls are much higher than this, but a good guide to planting is to put the trees one and a half times the distance from each other that the wall is in height. When the trees deviate much either way from this rule, they do not look so proportionate or so well. Nothing looks worse than to see trees upon a 15-foot wall planted every 14 or 15 feet; or, what is even worse, to see a 9-foot wall with the trees planted 24 or 30 feet apart.

It is now a demonstrated fact, that of all materials used for garden walls, there is none so suitable, or which answers the purposes of fruit-culture so well, as brick. It ought, however, to be of the very best quality, as nothing can be more teasing than to see the bricks decaying from the effects of the weather, in the course of a few years after being built. The difference between good and inferior bricks is very trifling, while all the other materials and workmanship will be the same. The good old rule, therefore, holds good in this as in other cases—viz., get a good material, pay a good price for it, and you will get satisfaction out of your bargain. The thickness of the wall will depend entirely upon the height. A wall 9 inches in thickness—that is, one brick thick—should not be more than 6 or 7 feet high, as if higher the wall is sure to be soon affected by frost, rain, and wind to such an extent that its security is doubtful. A wall from 6 to 12 feet should be 13½ inches thick—that is, one and a half brick—which makes a very substantial wall, and at the same time does not require piers to strengthen it, which, at best, mar the beauty of the whole, while I am rather sceptical whether they meet the end in view or not. All walls above 12 feet ought to be 18 inches in thickness, which will give them strength enough to resist the fiercest storms with impunity. Walls of this thickness may with benefit be made hollow, which does not in the least weaken them, while they are said to be warmer than those built solid. Various materials have been used for copings, but none answers the purpose so well as stone. Stone copings are more expensive at first, but the cheapest in the end, as all sorts of compositions are sure to crack in the course of time, and the rain entering through these cracks destroys the wall. Copings ought to rise in the middle and slope to the edge; and I would recommend that a gutter be cut along the edge 2 inches broad and 1 deep, which would prevent the drip from falling, as it often does in great quantities, upon the branches, foliage, and flowers of the trees, to their great injury. If the coping

is cemented together, the water could be led through these gutters to small lead pipes placed every 100 feet, which could empty themselves into the drains at the bottom of the walls.

About most places the south walls are all covered with either glass, Peaches, or Apricots. The next best situation must therefore be selected for the Pear. Most gardens are so placed as to face the sun from 10 to 11 a.m. In such a case the west side of the walls will be the best for the Pear, as it will not only be less exposed to the easterly winds and spring frosts, but will therefore have one hour more of the sun in this position than any other which could be assigned to it, unless the south; and many varieties of the Pear merit the latter position, which they do not often get.—JAMES M'MILLAN (*The Gardener*.)

ROYAL HORTICULTURAL SOCIETY.

MAY 4TH.

FLORAL COMMITTEE.—Rev. J. Dix in the chair. Messrs. Standish and Co. sent a small collection of plants, of which *Struthiopteris orientalis*, a very handsome half-hardy Japanese Fern, received a first-class certificate. From the same firm came also some interesting seedling *Rhododendrons*, with a white ground, in some instances densely dotted with dark spots in the centre; also *Acer japonicum argenteum*, one of the *platanoides* section, which it was requested should be sent again in the autumn; *Zonal Pelargonium* Jean Sisley, a very fine variety, bright orange scarlet, with a conspicuous white centre; and two new double *Zonal Pelargoniums*, named Wilhelm Spitzer, a brilliant scarlet, and Marie Lemoine, bright rose. These were two very promising varieties. Messrs. Standish likewise sent a hybrid *Nosegay Zonal*, called *Engèle Buenzo*, with bright pink flowers in large trusses.

Mr. Shaw, Manchester, sent *Croton Wrigleyanum variegatum*; the plant was too small for any decision as to its merits.

Messrs. Veitch exhibited a small collection of Orchids and other plants. *Vanda Dennisiana* received a first-class certificate; a new species of *Brassia*, somewhat like *B. maculata*, a very handsome Orchid, was also awarded a first-class certificate; *Epidendrum syri-githyrsun*, *Achryanthes acuminata*, *Peperomia heterostachys*, *Croton anacardifolium*, and others. A special certificate was awarded the collection.

A very interesting group of the seedling *Colens* raised by Mr. Bauso at the gardens at Chiswick, was much admired.

Mr. Bull sent *Geonoma zamorensis*, a small-growing Palm, which received a first-class certificate; *Podocarpus Maki variegatus*—first-class certificate; *Pitcairnia tabulariformis*, *Achryanthes acuminata*, and *Chamaerops arborescens* (?), to be seen again.

Mr. Turner, Slough, sent a new *Azalea* Madame Vander Cruyssen, large deep rose flower, spotted in the centre, the flower rather too flat; it received a first-class certificate. Also a basket of small plants of a new Golden *Zonal Pelargonium*, called *Golden Attraction*, with very deep golden-colored foliage.

Mr. Keynes, Salisbury, exhibited a basket of a new *Zonal Pelargonium*, called *Little Pinky*, said to be useful for ornamental bedding purposes, but not equal to many other well-known sorts.

Mr. C. Noble, Sunningdale, sent a collection of the seedling early-flowering *Clematis*, some of them very promising, but many of the plants too small, and the flowers not even fully expanded. Albert Victor, a fine circular pale lavender flower, received a first-class certificate; Miss Bateman, creamy white, a fine circular flower, was also awarded a first-class certificate. Among the others, which will probably be sent again, were Lord Napier, Lord Londesborough, and Lady Londesborough.

Mr. Edmonds sent several fine trusses of *Rhododendron Metropolitatum*, which he cut from the conservatory, Chiswick House; a brilliant carmine rose, very conspicuous and beautiful.

Messrs. E. G. Henderson sent several specimen *Blandfordias*, an *Ixora*, and *Azalea Bouquet de Flore*. A special certificate was awarded for the collection.

Mr. Green, gardener to W. W. Saunders, Esq., sent a large collection of variegated-folaged plants, which received a special certificate. Mr. J. Cooper, Reigate, sent a specimen of *Toxicophlea spectabilis*; Mr. Boyce, nurseryman, Clapham, a *Zonal Pelargonium*, not equal to many others in cultivation; and Messrs. J. & C. Lee a fine specimen of *Azalea nitida*.

Mr. Sherratt, gardener to J. Bateman, Esq., received a first-class certificate for *Dendrobium xanthophlebium*, also for *Dendrobium transparens*. E. Salt, Esq., received a special certificate for a fine specimen of *Masdevallia Veitchiana* with four beautiful flowers, also a special certificate for a fine example of *Dendrobium Falconeri*. Mr. Watson, florist, Hammersmith, was awarded a first-class certificate for a very fine white, early, forcing *Pink*, one of the purest whites ever seen, and most useful for spring decoration.

Messrs. Downie, Laird, & Laing sent a curious sport of a *Colens*, which may lead to a new form of this useful plant, the leaves pale green with a dark centre, margined with bright red; it is an interesting sport, and may probably produce a race of tricolor *Colenses*.

MEETING OF COUNCIL AND EXHIBITORS.—In accordance with a

notice issued to the leading exhibitors at the London Shows (see page 294), a meeting was held in the Council-room, at which Mr. Fraser, Mr. W. Paul, Mr. G. Paul, Mr. C. Lee, Mr. Standish, Mr. Laing, Mr. J. Cutbush, Mr. Francis, Mr. Kinghorn, and some others were present. The Rev. Joshua Dix took the chair, and explained the object of the meeting to be the discussion of the size of pots to be used at the exhibitions in 1870. As no plan of contemplated alterations was submitted a somewhat desultory conversation ensued. Some were in favour of placing no limitation on the size of pots, but to leave it to the judges to decide which might be the best collection, and others advocated classes for plants in small pots, so as to give amateurs a chance. Dr. Hogg presumed that it was not intended to abolish large pots, but to make a place for plants in small ones, and, so far as we could gather, that was the only conclusion arrived at.

GENERAL MEETING.—J. Bateman, Esq., F.R.S., in the chair. Fifteen new Fellows were elected, and the Royal Oxfordshire Horticultural Society admitted into union. The awards of the Floral Committee having been announced, the Rev. M. J. Berkeley stated with reference to the prize offered by Mrs. Lloyd Wynne for the best collection of Narcissus, that as it was found impossible to bring together a complete collection in flower at one time, it had been determined to extend the competition to an entire year, and it was hoped that it would commence at the next meeting. Mr. Berkeley added, that as it was so extremely uncertain what are species and what are not, it was intended to include all well-marked varieties in the competition. As an instance of how variable some of the Narcissus family are in their characters, he produced examples of *Narcissus biflorus* not merely with two but with four flowers on the same stem, and this a single stem, not one resulting from the union of two or more. He also exhibited three-flowered and one-flowered specimens of the same plant. In consequence of the variations which he observed in this respect, he was led to think it possible that *Narcissus biflorus*, hitherto considered a British species, might after all be only a hybrid, and on examining the plants in his own garden, whither they had been brought from the old garden at Fotheringhay Castle, he was strengthened in the supposition by finding no trace of an ovule in the flower. A sport of *Colerus Blomei* with the leaves overlaid with pink, was then noticed as likely to be the parent of a new race, as well as *Dieffenbachia nebulosa*, a hybrid raised by Mr. Bause, having *D. Weirii* for its male, and *D. picta* for its female parent. Allusion was also made to a variegated Maple from Messrs. Standish and Co., shown under the name of *Acer japonicum argenteum*, but of which the specific name has to be determined; and it was mentioned as a fact not generally known, that the capsules of some of the *Acers* are milky, while in others they are dry. It was also remarked in reference to a *Rhododendron* from the same firm, that out of six thousand plants resulting from crossing two distinct kinds, not more than twelve resembled the female. A *Croton*; *Toxicophlea spectabilis*, from Natal, used for poisoning arrows; and a *Lichen*, *Usnea florida*, very abundant on trees in Abyssinia, having been pointed out, Mr. Berkeley observed that the question had been raised in France whether the best way to produce Truffles is to sow acorns, and although the plants raised from a quantity of *Pyraecantha* berries, imported from Russia, had been found affected with a fungus attacking the berries, still the spores of the Truffle were very large, and it was impossible that they could permeate the acorns, and this remark applied to other Fungi as well, but not to all. Thus, it had been said that Rose mildew proceeded from the roots, but it was not so, for it, as well as the mildew on the Hop and Vine, is external, and admits of a remedy; but others are internal, and in general admit of no remedy, and, as an example, a *Lychnis* was adduced, of which the only part attacked was the anther, the spawn of the fungus having certainly traversed the plant. As regards corn, bunt could be remedied, but not mildew and smut, because by steeping in certain liquids (as a solution of Glauber's salts, afterwards drying with quicklime), it was possible to destroy the vegetative power of the seeds of the bunt, which germinate, produce a thread, and by that enter the seeds of the corn, whilst the smut is carried by the wind.

Mr. Bateman remarked he had never seen *Blandfordia Cunninghamii* in such beauty as he had seen it that day; and as regards the Maples, he could say that there are in existence many most strange and most charming kinds, and he only wished some one would offer a prize for them. He then made some remarks on the Orchids, especially noticing *Masdevallia Veitchiana* and *Dendrobium Falconeri*, from Mr. Salt's gardener; *D. transparens*, of which a fine specimen was shown from his own garden at Knyresley; *D. xanthophlebium*; *Vanda Dennisiana*, *Brassia* sp., and *Epidendrum syringithyrsam*, from Messrs. Veitch. Attention was also drawn to the fact that *Rhododendron Nuttallii* is now in flower in the conservatory at South Kensington.

ADVICE TO HORTICULTURISTS.—President Hammond, of the Warsaw (U.S.), Horticultural Society, in his last annual address, gave the following advice to beginners in horticulture:—"He who would succeed as a horticulturist must be in love with his profession; he must adopt it as his business, and identify it with his life. He must be a close observer, possess an indomitable will, and a large amount of patience and per-

severance. He must be a man who has learned to labour and to wait—not to labour for a season, to plant an orchard or vineyard, and then sit down and wait with folded hands, expecting without further effort to gain Pomona's fairest treasures; but to labour constantly and earnestly, firmly believing that the reward will come."

ENTOMOLOGICAL SOCIETY'S MEETING.

THE April meeting was held at Burlington House on the 5th ult., the President being in the chair. Amongst the additions to the Society's library received since the last meeting were the Transactions of the Swiss Entomological Society, especially interesting from the number of articles on the honey Bee and hive culture; also a remarkable memoir on the development of the Acarids by M. Claparède, presented by Sir John Lubbock.

Mr. Pascoe exhibited some interesting exotic Beetles, including a new genus of Diaperids, in which a curious case of mimicry was observed, the front of the thorax being armed with two flattened horns replacing the armature of the head so common in this family; also specimens of three genera of European forms now first detected as inhabiting New Holland—*Apion*, *Attelabus*, and *Ellescus*; likewise several very curious new genera of Curculionids, in one of which the hind margin of the thorax was armed with a flattened spine extending over the suture of the elytra.

Professor Westwood exhibited, from the Hope collection, a specimen of the curious *Panorpa nematogaster* from Java, described by Mr. MacLachlan at the preceding meeting from a supposed unique specimen in the British Museum; and *Blatta melanocephala*, a species of Cockroach, which he had received from the late Sir Charles Lemon at Carelew and other correspondents, as committing great injury in Orchid houses by eating the buds and young shoots of the plants. The species is a native of India and the adjacent islands. Mr. F. Smith stated that a small species of this family is to be found abundantly in tufts of grass on the seashore in Norfolk, and other small species are occasionally beaten from trees.

Mr. Frederick Bond exhibited *Sciaphila communana* of Herrick Schaffer, a species of Tortricids new to this country, captured at Wicken Fen, Cambridgeshire, and preserved specimens of the larvæ of *Phycita cribrella*. Mr. Druce exhibited specimens of the very fine and rare *Papilio zalmoxis*, Hewitts., from Old Calabar.

Mr. Frederick Smith exhibited a remarkable series of British humble Bees (*Bombus* sp.), showing the extent in the variation of the colouring of some of the species, whilst others, apparently, were not liable to any material amount of variation. With these humble Bees he also exhibited a corresponding series of their parasites, belonging to the genus of false-humble Bees (*Apathus* or *Psithyrus*), each species of which undergoes a similar amount of variation as the species to which it is attached; thus, whilst *Bombus subterraneus* and its parasite *A. campestris* respectively undergo a great and corresponding amount of variation, *Bombus terrestris* and its parasite *A. vestalis*, *B. pratorum* and its parasite *A. Barbutellus*, and *B. lapidarius* and its parasite *A. rupestris*, scarcely undergo any amount of variation. The parasites are allowed to enter the nest unmolested by the true worker *Bombi*, but it was remarkable that the variable species, *B. subterraneus*, is very irritable and easily provoked to use its sting, whilst the mossa-worker species are very quiet and tame.

A memoir was read, containing descriptions of various new species of exotic Butterflies, including two new species of *Papilio* from Ecuador, by Mr. Hewitson, and Mr. Baly contributed a paper containing descriptions of new species of plant Beetles, belonging to the families Cassidids and Hispidæ. A monograph on the British species of Homalotæ, a genus of minute Staphylinidæ, by Dr. Sharp, was read. Of this genus 89 species are contained in the last British Catalogue by Mr. J. R. Waterhouse, whilst Dr. Sharp increased their number to 157, of which 29 were entirely new to science.

Mr. A. R. Wallace contributed a memoir on certain eastern species of Butterflies, belonging to the genera *Nynes* and *Prothoe*, of which he described several new species which had partially been regarded by preceding writers as varieties.

PLANTS WINTERED OUT OF DOORS IN THE NORTH.

THE late mild winter has been very favourable for many of the occupants of our gardens in this neighbourhood surviving in the open ground in sheltered places. Thus, some *Verbenas*, as *Impératrice Elizabeth*, *Pirefy*, and others are not killed, nor are *Calceolarias Aurea floribunda*, *Kayii*, *Ruby Bicolor*, *Gem*, and others. *Centaurea candidissima* I have watched anxiously; it has lived through the winter without any protection, and is now looking as well as can be. *Coronilla glauca*, planted out last spring, has lived, and has been during the past month one mass of bloom, and an object of great beauty. At the same time and place was planted a large *Genista canariensis*, which is now in bloom, and was very fine in April. A large

plant of *Acacia lophantha* has lost part of its leaves, but looks well, and is beginning to make new growth. *Veronica speciosa* has not suffered at all. *Myrtles* have also endured the winter, and are all right. A large old plant of *Diosma fragrans* has stood out in a sheltered situation without even being plunged. The others were planted out in the ordinary way in a sheltered situation; they were protected a little overhead when the frost was likely to be severe. They are now fully exposed to the elements, and to all appearance will make good growth during the spring. They were old stunted plants that were turned out of the conservatory to make room for others.—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

POMOLOGICAL GLEANINGS.

"I BEG to call your attention to the beautiful appearance which the semi-double flowers of HENRI CAPRON PEAR present this season, some of which I forward for your inspection. On a large pyramid tree which we have growing here, now one mass of blossom, fully one-third of the flowers are similar to those I send you—one or two branches entirely so, of others a great portion, while other portions are of the usual character. I have never noticed this character before, and my attention was directed to it through the dense and beautiful appearance of the blossom. The tree, although in the midst of a plantation of over one hundred varieties all in full bloom, stands boldly out, the most beautiful of them all. I shall try, by saving the seeds from the fruits of these semi-double flowers, as well as by the grafts from the shoots, to perpetuate this. Is it not worthy? I also send a few flowers of the well-known semi-double ornamental *Pyrus spectabilis*, for you to observe that this Pear, Henri Capron, has the flowers equally double. I count fourteen and fifteen petals on each, the usual complement of the *Pyrus* family being only five. The flowers of the Henri Capron are much more spreading, and in consequence do not appear so double as those of the *Pyrus spectabilis*, which is one of the most beautiful ornamental-flowering trees in cultivation, and not nearly so common as it deserves to be.—ARCHAMBAUD." [These blossoms are, as you describe them, very beautiful. You are right to try and secure this character by grafting.—EDS.]

"SHOULD another month of such glorious weather continue, what a splendid fruit season we shall have! Never have trees been so laden with flowers, especially Apples, Pears, Plums, and Cherries. The Pears up to the present time look admirably, many of the earlier-flowering sorts and those on walls being beautifully set and swelling off. Care must be taken to thin the fruit if fine specimens are desired, and even if good-flavoured fruit is wanted. It is the same with Pears and other orchard fruits in this respect, as with Grapes and Peaches. Foliage is produced mainly through the agency of the roots, and the crop of fruit must be regulated according to the amount of foliage properly developed, not according to the size of the tree, as all the flavouring matter passes through, and has to be elaborated by, the leaves. This is well evidenced in the case of the Gooseberry. The fruit on a bush from which the caterpillar has stripped nearly all the leaves are either sour or tasteless.

"Peaches, Nectarines, and Apricots, I am sorry to learn, will be but a scanty crop. This appears to be generally the case, on the open walls especially, notwithstanding the abundance of blossom. This forms one more argument in favour of cultivation under glass; there, also, however, I hear of similar complaints. To what cause can this be owing? The trees mostly blossomed early, and March was a very cold, windy, and stormy month. Yet there were no very severe frosts, and in the case of protected trees, and those under glass, no injury could have been received. Some say it is to be attributed to badly-ripened and incipient wood, which I can scarcely believe, as I have seen many examples, and can affirm that the wood was perfectly ripened. I am inclined to attribute it greatly to the continued cold-cutting winds of March and the absence of pollen, which, in many cases, was remarkable, and also to the great and sudden excitement which the trees experienced in the beginning of April, after so long a season of lethargy.—ARCHAMBAUD."

DESTROY QUEEN WASPS.

I THINK it would be well to draw the attention of your readers to the great good to be obtained by, at this season, destroying as many wasps as possible, especially as we are told that each one now destroyed probably prevents a nest. There is little food

for them, and they are easily caught. I hung a bottle, with beer and sugar in it, on a wall a few days since, and I now have about a dozen drowned wasps—fine large ladies. I have for years pursued the same course in August, when I have been rewarded with pints; but surely one killed now is worth a pint at that season. I cannot but think that if lovers of fruit-growing would now use this means they would be saved much trouble and annoyance at the time when their fruit is ripening.—C. R. SCHOLFIELD.

THE PORTABLE ORCHARD.

(Continued from page 277.)

THE two commonest and best forms for potted trees are the pyramid and goblet. No doubt irregular forms will afford fruit, and I am sorry to say I have plenty of them, for it is impossible to obtain bought trees that can always be trained regularly; but these irregular forms are always best treated by trying to get rid of as much irregularity as possible. I shall endeavour, therefore, to describe regular forms only, giving passing hints for those roughly approximating to them.

To form a pyramid we require, as before, to encourage the growth of the lower branches as much as possible, and I know of no other way of accomplishing this but by checking the growth of the upper part of the tree till the lower branches are established; and as we cannot bend down the vertical leader now to any purpose, there is nothing for it but the knife. The young tree, then, must be cut down early in spring, so as to leave six or seven eyes above the graft, to give one shoot for an upright leader, and five or six for the lowest tier of branches. As this is the first serious amputation that we have been called upon to perform, and there is a right and a wrong way of doing everything, I will offer a few words about cutting-back. If a cut is made when the sap is active, the knife should have its edge placed exactly opposite the bud to which it is intended to cut back, and the cut made with a slant, coming out close above the bud, leaving no snag to force the young shoot sideways. A cut so made when the sap is active will have the lips of the wound

healed in a very short time. If the cut is made with too long a slant, the surface to be covered over is so much larger. On the other hand, if a snag is left the young shoot is distorted, and the wound cannot heal till the snag is cut off. When, however, a large amputation is to be made, the operation should be performed at two separate times, the first cut being made when the plant is dormant, and to the eye next above the one to which it is requisite to go, and then when the sap is flowing the final cut is made as above directed.

Also in cutting branches inclined at various angles, if they are large the cut should be made from below upwards, to prevent rain resting on the exposed surface; and as we generally have to cut to an under bud—that is, one on the under side of the branch, we must begin the cut just beyond the bud, and come out a quarter of an inch or so beyond it on the upper side; this little snag must be cut off in the following year when the tree is in leaf. All such large cuts should be covered with grafting wax.



Fig. 20.—Maiden Pear tree, showing the growth during the summer of the year it was grafted, and also the places where it has been stopped, and where it was cut back in the following spring.

Reverting, then, to our young tree, which is to be cut down

in order to develop the lowest branches, the cut should be made as in *fig. 20*, at *a*. This figure is from a Louiso Bonne Pear. The upright shoot is that from the *A* bud of the scion; the shoots from the *B* and *C* buds have been stopped at the points marked *s*. This was done early in July, whilst the *A* shoot was allowed to grow to the end of August, and was then stopped. A warm autumn made this shoot push again; ordinarily it would not have made any further elongation after being stopped so late as the end of August. The reason for stopping it at all was to help to mature the lower buds. At the same time that the leading shoot *A* is cut at *a*, what was the upper part of the scion, with the *B* and *C* shoots, is to be removed by being cut off at *b*. If all go right the seven buds on the portion of the *A* shoot left will grow vigorously. The central or leading shoot should be stopped by the end of July by pinching off the upper portion with six or seven leaves from the point. The six lateral branches are to be permitted full liberty till the end of August, and then must be stopped by merely pinching off the end of each down to the first full-sized leaf. The leader will push again, the new shoots will use up all superfluous sap, and the branches will rarely break again, only forming a perfect bud at the leaf to which they have been stopped.

Fig. 21 represents our young tree at the end of this second season. As before, *s* denotes the place where the leader was pinched in July. Such growth makes it a very easy matter to

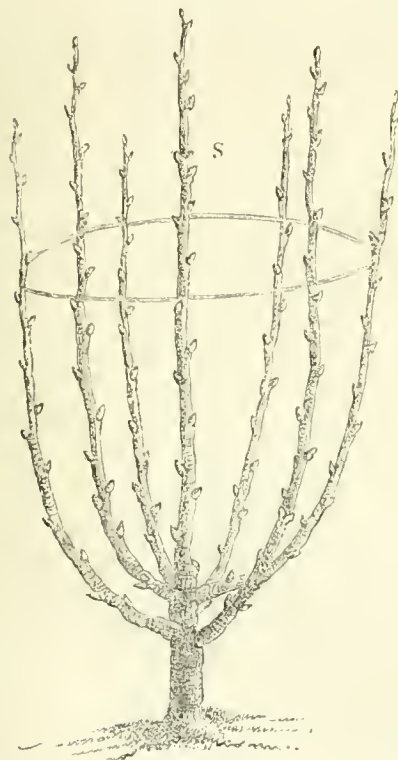


Fig. 21.—Young pyramidal Pear tree at the end of the second year, showing the growth from the lowest seven eyes. The *s* shows the place where the central shoot was stopped.

form the lowest whorl of the pyramid; but it does not happen as a matter of course that the branches grow so regularly and equally as in this specimen; most commonly some of them are inclined to grow stronger than the rest, and we must find out means of regulating their vigour. Now, we shall have to cut off about one-third of each of these branches in the following spring, and it does not matter, therefore, whether the eyes in the portion to be removed are well developed or not; therefore we can diminish the vigour of the branches which are inclined to grow too vigorously by removing the foliage from these upper portions. If, however, we take off a leaf we ruin the bud in the axil of that leaf. Now, though we do not care for the buds in these ends of the branches, it is better to proceed in a less destructive way, which is to cut the leaves across with a pair of scissors, at about their middle. By the time this is needed there will be, probably, some six or eight leaves to be shorn, and the check this gives to the whole branch is generally enough to

allow the others to overtake it. If, however, some unruly fellow will persevere in outstripping his brethren, there is nothing for it but to pinch his head off at the last well-developed leaf. This equalisation must be seen to by the end of July.

In the following spring all the seven branches must be cut back to about the distances indicated by the ellipse, in order to ensure the development of the spurs or laterals on the lower portions. We cannot hurry these forms excepting at the sacrifice of fruitfulness. If we allow the branches to grow unchecked, they will have no eyes on the lower portions to furnish spurs; and if we stop the branches as they grow by summer pinching, we prevent them from becoming vigorous; therefore in the early stages of formation we must allow them to grow more freely, and cut back more severely than is right when the tree is once fairly formed.—W. KINGSLEY.

(To be continued.)

MAIDSTONE GARDENERS' IMPROVEMENT ASSOCIATION.

(From a Correspondent.)

SOME time ago Mr. Wills explained at length the working of a society of gardeners at Leeds, and set forth the advantages of a body of men working together as compared with those attendant on efforts made single-handed. He also described the benefits which the society offered in alleviating the distresses of its members, and in its meetings affording opportunities for discussion on the culture of particular plants and branches of garden management. The former feature—that of giving assistance in sickness and other misfortunes, however commendable, has also its shady side, for a benevolent club and one for the discussion of professional matters do not in every case work well together; and the example given is not of sufficiently long-standing to serve as a proof of the society being exempt from the little jealousies and unpleasantnesses that creep in, in spite of all the care of well-disposed and energetic managers. Witness the number of horticultural societies which have fallen into decay from this cause during the last twenty or thirty years. However, let us hope that with the spread of education, and a more just appreciation of the advantage of acting in unison, such societies as that which Mr. Wills has described may go on prosperously, and be of benefit alike to the members and neighbourhood. The Leeds Society is placed in the centre of a wealthy district, with a teeming and opulent population, and, not the least advantage, the town may be said to represent a tract of country of more than ordinary fertility for a manufacturing district. With coals cheap and plentiful as compared with what they are in many places, the probability is that gardening is there extensively practised. But my purpose is not to make a comparison between Leeds and other districts, but to show that with a very small beginning other associations of gardeners may also be formed in neighbourhoods which have not the wealth and population of manufacturing districts, and where the nearest coalpit is probably two hundred miles off.

About seven years ago a few gardeners in the immediate neighbourhood of Maidstone met, with the view of forming a society where subjects connected with their calling might be discussed. A set of rules having been determined on, and a small subscription required from the members, its work commenced at once by holding monthly and fortnightly meetings, the latter being less important than the former. Active officers being appointed, and suitable subjects chosen to debate upon, the meetings were very popular, and honorary as well as ordinary members joined in numbers, so much so that during the second winter of the Society's existence it was determined to hold a show. The Corn Exchange, the largest room in the town, was engaged for the purpose, and the skill of the committee was taxed in devising means to decorate it by wreaths of evergreens above and a judicious display of plants on stages on the floor, together with vases of artificial stone, basins, &c. The appearance of the whole was so much appreciated that there has been a repetition of the spring show every year, and at that held last spring, to which a small charge was made for admission, there was upwards of £88 taken at the door. Considering that the town, unlike the centres of manufacturing industry, does not count its population by tens of thousands, but that there are only about 24,000 inhabitants, and the neighbourhood is a rural one, this is a good sum, especially as all the honorary members had a number of tickets free.

For the working of a Society of this kind considerable

labour and no small amount of support from the body of its members are necessary, but hitherto both have been cheerfully given, and all has gone off well, the working staff being at all times equal to their task, and time kept more punctually than has often been the case at exhibitions claiming a higher rank.

The Society has its holidays as well as its working days, and every summer excursions are organised, which have hitherto been free to the members, the public paying a very reasonable price for their tickets. In this manner, Kew, the Crystal Palace, and Hampton Court have been visited, and the trains every time conveyed about five hundred passengers. The increasing number of members, however, renders some change in the management of this department imperative, as the liberal spirit in which the Society has met the public and its own members has left it almost a loser by these affairs. Nevertheless, the Society has always been able to meet its engagements, and occasionally liberal grants of its funds have been made to members in times of distress, as well as now and then contributions to the local charities.

To meet requirements like the above, it may be supposed that liberal subscriptions from the members must be necessary, but such is not the case. The funds of the Society have been steadily increasing during the last five years, and now amount to upwards of £200, while the members' subscription is only 4s. a-year. Of course, the assistance given by honorary members has materially augmented the funds, but all these members have been liberally supplied with tickets to the exhibitions, &c., so that the Society takes credit to itself for the manner in which its affairs have been managed, and for being able to accumulate so large a sum from such small subscriptions without incurring the charge of niggardliness. On the contrary, all fair and reasonable charges connected with the exhibitions have always been paid on the spot, and not long ago the sum of £10 was handed over to the widow of a diseased member, while smaller sums have been given to others whose cases seemed deserving of assistance.

The question naturally arises, Cannot similar societies be formed elsewhere? The neighbourhood of Maidstone presents no advantages for such a purpose not common to others, and the number of professional gardeners, even counting many whose position includes other employments, is certainly much smaller than in the districts more densely populated. All that is required is unanimity of purpose on the part of those who ought to take the lead in such matters, and the object is generally followed-up by those in humbler circumstances. There can be no question of the advantages attendant on well-conducted meetings: for instance, the meetings so frequently reported of the Royal Horticultural Society, where new and interesting productions form the subjects of comment amongst those present. The arrangement of the meetings of the Maidstone Gardeners' Association is somewhat similar, differing, however, in one respect—the subject for the evening's discussion is announced at the previous meeting, and the member who introduces it is allowed to speak at greater length than others, the ordinary rules of other societies of a like kind being observed in the debate. Some latitude is, of course, given under peculiar circumstances, but the subjects for discussion are limited to those connected with gardening. Generally speaking, the monthly meetings have been more numerously attended than the fortnightly ones, although all have been well attended, and good order and obedience to rules have been maintained. If the subject for the evening's discussion is disposed of before the appointed hour for breaking up, it is usual to give persons who may have brought specimens of fruits, vegetables, or plants, an opportunity of explaining what they consider their interesting features, and this part of the evening's work is not by any means the least instructive, as there is usually something useful to be learned. An efficient Secretary notes down the features of the discussion, and other matters of interest are duly recorded for future reference.

Such is the working of the Maidstone Gardeners' Mutual Improvement Association, which has now passed its sixth anniversary, and which continues to increase in importance and utility, and long may it do so.

WORK FOR THE WEEK.

KITCHEN GARDEN.

MAKE vigorous war against all insects. The rising crops of Onions, Carrots, Parsnips, &c., should be thoroughly cleaned, and the ground between the latter two well stirred with the hoe. Keep up successions of various salads, and let the *Nasturtiums*

and *Gherkins* be sown. This is an excellent period for planting *Asparagus*. Ground from which *Broccoli* and other winter Greens have been cleared should be manured and trenched, or dug, as may be requisite for the succeeding crop; or, if it is intended for *Celery*, the trenches should be taken out at once, so as to be able to plant a crop of Lettuce or Spinach between them. Prepare *Tomatoes* for planting out, also *Sweet Basil*, &c., with *Ridge Cucumbers* and *Vegetable Marrows*; also make a sowing of *Sweet Basil*, *Marjoram*, and *Savory* on a light warm border. Prepare the early *Celery* for planting out as speedily as possible, and attend to the plants for succession crops.

FRUIT GARDEN.

Proceed with the disbudding of Peach and Apricot trees, leaving for the present, however, any shoots the leaves of which overhang or shelter the fruit; but the points of such should be pinched out, in order to afford those intended to be left at the final disbudding every encouragement. It will also be necessary to go over Plum, Pear, and Cherry trees, to remove gross shoots, and to stop those not wanted for laying-in. This, repeated as may be necessary during summer, is greatly preferable to the old practice of allowing the shoots to remain till mid-summer, and then cutting them back to two or three eyes. Extirpate insects on all fruit trees. The Apricots will require hand-picking, and the foreright and luxuriant shoots should be pinched.

FLOWER GARDEN.

Except in favoured localities, it will be unsafe to commence planting out the bedding stock until we experience a decided change of weather. Meantime harden the plants off, and arrange them so that when planting-out is commenced it can be done expeditiously. Also decide what is to occupy each bed, and have everything in readiness. Presuming that the plants for each bed have been previously determined on and hardened-off, no great difficulty will be met in filling up the beds. Some allowance must, however, be made as regards the time when it is desired to have the principal display of flowers. If early, the plants will require to be placed more closely together, and need not be stopped; and if not before a later period in the summer, somewhat thinner; and the flower buds should be pinched off as they appear till the plants have filled the beds. There are two methods of arranging the colours in parterres and flower gardens: the one is to produce a striking effect by, employing plants only of a decided colour, principally red, blue, and yellow, using white for separating the different divisions. When the colours are well contrasted this plan is very effective, particularly when viewed from a distance, and is well adapted for situations where the beds are not numerous, and where there is a considerable breadth of grass or gravel to overpower. Yet a repetition of the same flower, however brilliant, is seldom so pleasing on a close examination as where variety, both in form and colour, has been secured, and when the gradations into which the primary colours run have been arranged in accordance with the rules governing their distribution. Now will be the time for the amateur to make the necessary additions to his collection of Tulips, and I would advise all intending purchasers to visit various beds and select for themselves. It is a much more satisfactory plan than buying the dry bulbs. Awnings must be put up, admitting all the air possible at the sides, to prevent the plants being drawn. Plant out Dahlias, place supports to them, mulch the surface of the ground, and water regularly when they require it. Old plants of Hollyhocks, which are throwing up four or five stems, should be reduced to two or three, and these should be neatly tied out to short stout stakes, so that each spike may be free from its neighbour. Tie up Pinka, and remove the superfluous shoots. Divide *Polyanthuses*, planting them in a very shady, cool spot; where such is not to be had naturally, artificial shade must be made, as this is essential to their wellbeing.

GREENHOUSE AND CONSERVATORY.

Liberal shifts will now be frequently required for growing specimens of choice plants. Attend well to thorough draining. The *Pelargoniums* will now be showing bloom, if it is not already expanded. As soon as this occurs, unless the plants are of gross habit, a little weak clear manure water may be given. Such may also be applied to the *Azaleas* making their wood, also to the *Camellias*. Pot a reserve stock of *Pelargoniums*, *Calceolarias*, *Verbenas*, *Heliotropes*, &c., in 3-inch pots, and keep them by themselves. Such will be continually gay during the latter part of the summer and autumn. The *Chrysanthemums* will soon require propagation. Although a slight shade is indispensable in the conservatory in the forenoon of bright

warm days, this must be used sparingly when the weather proves unsettled, for without abundance of light flowers never colour properly, and they soon fade if kept in too shady a position. Air should also be freely admitted whenever the weather will permit. When it can be accomplished, watering should be done in the morning, in order that the superfluous moisture may be dried up before evening, so as to avoid damp at night, from which there is some danger during the present state of the weather. The New Holland twiners, when done flowering, should have their shoots well trimmed-in before growth commences, thinning the main branches where necessary by cutting out weakly ones. Always remember to secure plenty of young wood towards the bottom. Some of the earlier-flowering half-hardy plants will soon be past their best, and a judicious amount of foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. Many plants in the stove, as *Achimenes*, *Gloxinias*, &c., should now be in a forward state; but these must be carefully prepared for removal to the cooler and drier atmosphere of the conservatory, otherwise there will be great risk of injuring the foliage, and when circumstances will admit, plants that have been grown in a warm moist atmosphere should be removed to an intermediate house about a fortnight previous to their being taken to the conservatory, and gradually inured to a free circulation of air, &c. By attention to this, and placing the plants in the warmest corners in the conservatory, *Clerodendrons*, *Allamandas*, and other plants, will continue growing slowly and blooming for three months at a time, whereas, if this be neglected, their beauty may be very short-lived.

STOVE.

As stove plants advance allow them plenty of room, particularly plants chiefly ornamental by their foliage. The syringe must be in constant use to keep down insects, and must be assisted by fumigation when thrips is likely to establish itself. The white and brown scale are best kept under by carefully handwashing the infested plants with a strong lather of brown soap and water. Soft brushes or pieces of sponge should only be used for this purpose, in order that no injury may be done to the leaves. *Amaryllises*, &c., should be removed to the conservatory or show house for blooming; there they are great acquisitions. Mark any striking varieties for saving seed. After blooming plunge them in a little bottom heat in a frame near the glass to perfect their growth. Fires for the stove and Orchid house will still be necessary.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We ran the Dutch hoe wherever it would go, weeds or no weeds seen, removed exhausted vegetables as Brussels Sprouts and Coleworts, and cut over Scotch Cabbaging Kale, and Veitch's Late Curled, to help a little before the Cabbages became firmer and harder. The chief work besides has been a continuation of that of preceding weeks. Having been from home a few hours one day, though we cannot at present give an account of all that we saw, some remarks may be useful, and first as to

Cucumbers.—With plants of the same age and kind our dung frame has this year beaten the hot-water pit, but there has been little difference between them. In both cases the plants were chiefly grown in sandy soil taken from mounds at the sides of a highway that had accumulated for years, the top turf being thinly taken off and laid aside for other purposes. This soil was enriched merely with a little sweet rotten leaf mould and hotbed dung, thoroughly decomposed and aired, and a few spadeful of charred rubbish. We would have added more if we had had it. The longer we grow plants of all kinds, the more do we fall back on simple composts. We have known people send twenty miles for a load of some fine loam, when they could have obtained nearly as good not many yards from their own homesteads. The sides of roads are a never-failing source of supply, but roadwardens are more particular than they used to be, and we presume that in general such soil cannot be taken without the consent of the landlord of the adjacent land, or the lord of the manor. When it can be obtained with little trouble, it renders one independent of the trying after "the top spit of an old pasture," so frequently spoken about. Many gardeners may long after such material, and get no further than longing.

As yet we have had no trouble with these Cucumbers; no trouble with insects, no trouble with disease, no trouble with

earthing-up, and thus so far exposing the plants, as all the earth was given at once. We have just done beds for two frames, and in two days the soil was warm enough for planting. We must not, however, shout too early, for we know not how soon the disease or some other evil may assail us.

Mr. Cadger, at Luton Hoo, has at present as fine a span-roofed house of Cucumbers as could well be seen, and as the most of the fruit are growing in suspended rather whitish glasses, you might fancy you were transported to some scene of eastern magnificence. We prefer, however, to see the fine, straight, green Cucumbers hanging without such enclosures, as we have seen them there, and in a somewhat similar span-roofed house at Kimpton Hoo. The hanging generally makes the fruit straight enough when there are not too many swelling at one time, and there is something at the roots to meet the demands of fruit and healthy foliage. Nothing could look more healthy than these Cucumbers; but Mr. Cadger had not been without his troubles with the previous or winter crop, which was almost destroyed by beetles, cockroaches, and crickets. At The Hyde, Mr. Young showed us what had been a fine hot-water pit of Cucumbers, containing even then plenty of good Cucumbers, but the bed fresh-surfaced, and the leaves thin, and many of them gnawed all round their edges. Both gentlemen seemed to depend much on water as near the boiling point as possible, slushing it all over the woodwork, brickwork, and every hole and cranny at a cleaning-out between crops. When that could not be done, glass or glazed earthenware vessels were set, with beer or treacle water in them, and some little sticks placed for the beetles to mount up by, the higher end hanging over the vessel, and the beetles on reaching it fell down into the liquor. We recollect once setting such a trap for beetles, &c., and finding in the liquid, in addition to a goodly number of them, half a dozen mice. We have known crickets partake of arsenic and butter spread on thin slices of bread, and the live ones in cannibal fashion feasting on the dead poisoned ones. Nothing, however, was found so effectual among growing crops at both places as phosphoric paste, such as that manufactured for mice and rats, merely placing a little of the paste on a tally, and the slightest nibble destroys the crickets. We presume the scent and the luminous appearance at night attract them.

All of these are great annoyances among growing crops in places where there is heat, and for thorough clearance when there was no crop we would have most faith in burning sulphur, and then washing the walls and everything with boiling water. We recollect seeing several empty houses in a fine street in London that had been untenanted for years. The cockroaches and black beetles had so obtained possession that no one could be found to contest it with them. It was beetles everywhere.

The pages of our back volumes testify to the great success of Mr. Cox as a Cucumber grower. We have never seen such numbers of Cucumbers hanging in the same space as in the span-house at Kimpton Hoo, where Cox's Volunteer was grown, still one of the best kinds for abundant bearing, though not so long as some other kinds, as the Telegraph, &c. For some time *Cucumber disease*, both the spot on leaves and the gummy exudation on the fruit has visited him, and he says he feels almost unable to contend with the evil, and yet the roots appear healthy, strong, and vigorous. So far as we know, this dire disease is as great a mystery as ever. Some gentlemen have written to us throwing the whole blame on the want of skill of the gardener, but we consider that skill has nothing to do with it. The most successful growers for twenty or thirty years, have felt themselves nearly helpless when the malady visited them. We had our share of it for several years, and can state that now we do not know what brought it or what took it away. It mattered not what soil we tried, what seed we had, or where it came from, what place we had the plants in, whether dung bed, frame, hot-water pit, hand-light on ridge, in the open air, trained on the ground, or against a trellis or fence, planted out in a bed, or the roots curbed in a pot—the disease showed itself. We have found no palliative but in simple compost, cleanliness, and airing the soil, and very frequent planting, but as to conquering the disease we felt perfectly helpless. We could obtain Cucumbers only by continually planting and clearing away the old plants when they became affected. It is rather mortifying to say so, but we know of no remedy when once a plant is affected. A good gardener is almost powerless, so far as overcoming the evil is concerned.

Peas.—We found in the places visited Sutton's Ringleader was earliest in bloom out of doors. At Luton Hoo there were

two fine pits of dwarf Peas in full bearing. Maclean's Little Gem was the best for flavour; Tom Thumb, or Beck's Gem, was bearing by far the most profusely.

Some cold pits had been cleared of early Potatoes. Of course room must be had where all such crops are wanted early in abundance. Broccoli in most places was, like ours, coming rather too much at once; but Mr. Cox had a nice piece, the heads just forming, which would be valuable, the plants were from seed of his own selecting and saving.

FRUIT GARDEN.

Meeting with Mr. Dewsbury we did not go to Stockwood, but from all accounts we must give precedence to him this year as respects forced Strawberries. With us and some of our neighbours they have not been quite so good as usual this year, especially the earliest. Even the splendid plants at Luton Hoo, perhaps the strongest in pots we ever saw, did not quite come up to Mr. Cadger's expectations. Later crops were looking very promising in pots on a steep stage in a span-roofed house. Melons were very forward, trained on a trellis in a steep-roofed house near the glass, but with fine shading outside. The Peach wall has had fresh trees planted along a good portion of it; the trees planted by Mr. Fraser, after having flourished for years, having mostly begun to decline after the terrible nights at the close of 1860 and beginning of 1861. As a rule, the fruit crops, especially the hardy kinds, seemed to promise well. We think we have the pre-eminence in being liked by small birds, as nowhere did we see such numbers as we have; but we noticed in some places that to amuse themselves they had begun to make dry baths in the Onion beds, and, as with us, were tearing up great numbers of the young seedling Onions. Net and altogether, we fear they have cleared off the most of our earliest Beet.

Orchard trees in pots have needed more watering in the past hot days, and a little sprinkling of water on the floor prevented the air becoming too dry under glass. Thinned and tied-in shoots in the Peach house, and regulated part of the late vinery. We kept the paths and floors of other houses damp, instead of syringing much overhead. Moved down the highest shelf of Strawberries in the Peach house as liable to be earliest infested with red spider, and as watering them well was becoming more difficult. The Strawberries alluded to last week as pricked out last autumn, are showing better than we expected. We have, therefore, potted a lot, and plunged the pots in a slight hotbed out of doors, to encourage the roots to the sides of the pots.

Shading.—Several new plant houses have been put up at The Hyde, and the question of shading was discussed among a practical committee of visitors and visited. On the score of economy alone, we have done little or nothing with shading for many years, using in extreme cases a little white-coloured water, or when we desire it to be more permanent, we use a little size in the water, or milk and just a little whitening to give a very slight shade. Some labour is thus also saved, as when fine shading outside the glass is used, considerable attention must be given in rolling down and rolling up at the right times. As a matter of propriety, there can be no question that in the majority of cases a thin shade applied to the outside of the glass is the best. The glass can thus be always clear and clean, and the shade applied when the sun is very bright, and removed at once in cloudy or dull weather, so that the plants can have the full benefit of direct though subdued light. The great argument against all fixed shading or shading the glass, is that the shade remains in a dull day, when the plants would rejoice in all the light they could obtain. Some of the best shading we have seen for the outside of houses, with rollers, is a sort of strong white open cheese cloth, used largely at Luton Hoo. We cannot say we like the dirty colour of frigi-domo for elegant houses, and the most of tiffany is too slender to bear the weight of a roller without support. We would prefer bleached calico, as cheaper and better. For fixed shading for ornamental houses, we have seen nothing to beat the plan adopted by Mr. Cox, and which we think we alluded to years ago. For instance, in the new conservatory at the house—we forget whether it has a double or triple span—in the ridge-and-furrow style, with upright glass in front, just in the level horizontal space under each ridge or span, strong white book muslin is fastened from side to side with rings and hooks, well stretched. In a dull day such a thin shade does not injuriously exclude the light, and in a bright day it shades sufficiently. When you look up you see everything clean, there is little waste and wear in the material, and there is no ceaseless trouble with rollers, and ropes, and pulleys outside the

roof. Under similar circumstances we would be inclined to follow Mr. Cox's example. Here we would give a caution: Dispende for a time with all such textile fabrics for shading, either outside or inside of glass, and you may find it will not be such an easy matter to return to such shading again.

ORNAMENTAL DEPARTMENT.

We have been busy with potting, arranging bedding plants, making up hardy edgings, &c., and without finding anything new, we found that all our neighbours were doing their best to place their bedding plants out of doors under some rough protection. Three things we must notice. First, a sight we saw on going to The Hyde, which both delighted and mortified us. A wood had been thinned out, and the ground was carpeted with a dense profusion of the wild blue Hyacinth. The sun shining brightly through the thinned and pruned-up trees, produced a flickering in the atmosphere, that set off the bright dancing bells to the greatest advantage. We can see numbers of the same wild flowers every day, but never did we see such masses. But then the mortification to think, that with all the energy and skill we could command, we could not hope to equal, far less excel, that scene in the woodlands wild.

The second thing is this. Some years ago we passed a high eulogium on Felix, a Pelargonium raised by Mr. Tirebuck. We have found it a slow grower, and we have only yet a few of it, partly, perhaps, from carelessness. Mr. Young may well make Mr. Tirebuck uneasy, as from small beginnings he has such a numerous stock of strong healthy plants. For a bed or pot this is one of the most unique kinds. In Mrs. Young's window was a plant in a 4-inch pot, with three trusses of bloom almost as large as Hydrangeas.

We noticed a speciality at Luton Hoo last autumn, and we find it will be more remarkable this season, and that was a number of fine plants of *Coleus Verschoffeltii*, strong and lofty, trained in the pyramidal form, and which had a very striking appearance. With this kind, and the best of the new varieties, Mr. Cadger is growing plants for the same style this season. With rich nourishment, some of the best coloured have leaves already almost as large as Cabbages. Those who have room and a little heat, may well take a lesson as to this mode of growth. Set among other plants, or as a row of standards by themselves, and especially in the pyramidal form, these plants will have a most fascinating appearance.—R. F.

COVENT GARDEN MARKET.—MAY 5.

THERE is rather more animation in business, and prices are fully maintained for the best descriptions of vegetables. Hothouse produce comprises Peaches, Nectarines, Melons, Strawberries, Grapes, Pine Apples, and Figs, all of excellent quality. Foreign importations, which are heavy, include Apricots and Cherries from the south of France, Bananas and Pine Apples from Madeira, Artichokes and Tomatoes from Algiers.

FRUIT.							
	s.	d.	s.		s.	d.	s.
Apples ½ sieve	3	0	4	Melons.....each	5	0	15
Apricots.....doz.	8	0	4	Nectarines.....doz.	24	0	36
Cherries.....lb.	0	0	0	Oranges.....100	4	0	12
Chestnuts.....bush.	10	0	16	Peaches.....doz.	30	0	42
Currants.....½ sieve	0	0	0	Pears (dessert).....doz.	0	0	0
Black.....do.	0	0	0	Pine Apples.....lb.	8	0	12
Figs.....doz.	15	0	24	Plums.....½ sieve	0	0	0
Filberts.....lb.	0	0	0	Quinces.....doz.	0	0	0
Cobs.....lb.	1	0	1	Raspberries.....lb.	0	0	0
Gooseberries.....quart	1	0	2	Strawberries.....oz.	0	6	1
Grapes,Hothouse.....lb.	10	0	12	Walnuts.....bush.	10	0	16
Lemons.....100	4	0	8	do.....100	1	0	2
VEGETABLES.							
	s.	d.	s.		s.	d.	s.
Artichokes.....doz.	3	0	6	Leeks.....bunch	0	4	0
Asparagus.....100	5	0	8	Lettuce.....score	1	0	3
Beans,Kidney.....hd.	2	0	3	Mushrooms.....pottle	1	0	1
Beet,Red.....doz.	2	0	3	Must.&Cress,punnet	0	2	0
Broccoli.....bundle	1	0	2	Onions.....bushel	12	0	14
Brus.Sprouts ½ sieve	0	0	0	Parsley.....sieve	3	0	4
Cabbage.....doz.	1	0	2	Parsnips.....doz.	0	9	1
Capiscums.....100	0	0	0	Peas.....quart	5	0	8
Carrots.....bunch	0	8	1	Potatoes.....bushel	4	6	0
Cauliflower.....doz.	3	0	6	Kidney.....do.	4	0	7
Celery.....bundle	1	6	2	Radishes doz.bunches	1	6	0
Cucumbers.....each	0	6	1	Rhubarb.....bundle	0	6	1
Endive.....doz.	2	0	0	Sea-kale.....basket	2	0	3
Fennel.....bunch	0	3	0	Shallots.....lb.	0	8	0
Garlic.....lb.	0	3	0	Spinach.....bushel	2	0	8
Herbs.....bunch	0	3	0	Tomatoes.....doz.	1	0	2
Horseradish.....bundle	3	0	5	Turnips.....bunch	0	4	0

TRADE CATALOGUES RECEIVED.

J. Carter & Co., 237 and 238, High Holborn, London, W.C.
—Carter's List of Bedding and other Plants for 1869.

T. L. Mayos, Lugwardine, Hereford.—*Catalogue of New and Choice Plants and Bulbs.*

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Gulielmus*).—The edition of Miller's Dictionary is of no value. Our volumes commence on the 1st of January and 1st of July annually. The advertisements need not be bound up with the other pages. We have cloth covers for binding every volume.

ROYAL HORTICULTURAL SOCIETY'S PELARGONIUM SHOW (*K. A.*).—It is to be held on May 22nd.

MUSA CAVENDISHII FRUIT (*Bacup*).—To cut the cluster of fruit whilst green, and hang it up in a dry, warm room to ripen is the common practice.

HEATING A PLANT CASE (*Retlaw*).—If you can employ gas, that is the least troublesome mode. "Window Gardening for the Many," contains directions for propagating in and managing such cases. You can have it free by post from our office if you enclose ten postage stamps with your address.

VINES FOR OUT-DOOR CULTURE (*R. U.*).—We gave a list last week. The Hamburgh and Hambro' are the same.

CHERRY TREE BLIGHTED (*J.*).—We cannot exactly make out the cause of the blight on your Cherry tree, but as you say it is often so, we fear the evil lies at the roots; it may be that the site is unfavourable. In general Cherry trees furnish a much greater proportion of bloom than any other description of fruit trees, and some delicate kinds as the Elton and Black Tartarian are shy settlers as open standards, and even against walls when the situation is not good. We have seen much good result from thinning the blossoms just before they expanded, as doing so enables the remainder to set better, but the blight on the leaves must be attributed to atmospheric causes at the time, something wrong at the root, or to the foliage being diseased the autumn before. The last cause is not unlikely. If we knew more of your case we might be better able to give an opinion.

ROSES (*A. Y.*).—"I do not like saying which are not good ones, I simply recommend those which are good. Buy Antoine Ducher, Madame Marie Girodde, Madame Rolland, blush, and Madame Alice Dureau. If you have not Alfred Colomb, buy. Any liquid manure (stale) is good for Roses. Leaf mould and loam will make good soil for Roses."—W. F. RADCLIFFE."

CYATHEA DEALBATA, CHAMEROPS EXCELSA, AND CORYPHA AUSTRALIS TREATMENT (*An Old Subscriber*).—The Cyathea, and the two Palms will succeed in a greenhouse temperature, but do best in one ranging from 45° to 50° at night in winter, and from 55° to 60° in summer, with a rise from sun heat to 80° or 85°. The Tree Fern is benefited by slight shade from the powerful rays of the sun, from March to October, and though the Palms like sun they will succeed under the same treatment as the Tree Fern. They should now be potted if that be required, giving to the Fern a compost of two-thirds sandy fibrous peat, and one-third turfy loam, with one-sixth of silver sand added and intermixed. The compost should be pulled to pieces with the hand, and used rather rough, good drainage being given, as the plant requires an abundant supply of water when growing, and should not at any time have the soil dry. The old fronds now turning brown may be removed, but not before they wither, as there would then be bleeding from them. A moist atmosphere should be maintained—indeed, it can hardly be kept too moist when the plants are growing—and a moderate amount of ventilation should be given, avoiding cold, dry currents of air.

RENOVATING OLD LILACS (*E. M.*).—Your old bushes of these will not be improved by the removal of the suckers. It is not unusual for them to die off when the suckers are removed, as they derive support from the latter. Suckers are natural to the Lilac, but it may be grown as a standard, or otherwise, with one stem, if so trained from the commencement, the suckers being removed in June or July, and again in autumn, never allowing them to make much growth before removing them. Standard Lilacs, or those trained with single stems, are not nearly so strong, healthy, and long-lived as those allowed to throw up suckers, and we should advise you to cut out the old, long, naked branches, and replace them with the best of the suckers, removing some of the latter so as to prevent their being too crowded. That is all that is required to have them bloom finely. The suckers should be removed in autumn.

TOMATO CULTURE (*A. M. T.*).—Your situation being cold, you will not, except in warm seasons, succeed in the cultivation of Tomatoes out of doors, but you may grow them perfectly in a greenhouse, if you give them a light, airy position, otherwise they do not succeed well, owing to the shade of climbers and other plants. We presume that your plants are now strong, the seed having been sown in March in a hotbed, the plants potted-off singly when large enough to handle, shifted as required, well hardened off, and removed to a greenhouse or frame. If you intend to try them against a wall they should be planted against a south wall in good, rich, light soil, in the second or third week in May, and be well watered in dry weather throughout the summer. The shoots should be thinned, and trained from 9 to 12 inches apart, stopping each at one joint above the fruit, and if more than two shoots start, thin them to that number on each shoot, keeping them thin, and stopped to one joint above the bunch of fruit as it is produced. Remove the leaves from the front of the fruit in order to expose it to the sun's rays and aid its ripening, which will be promoted by keeping the plant rather dry at the roots, but not so much so as to cause the leaves to flag. Any fruit not ripe in October may be cut with a portion of the shoot, and hung up in the green-

house to ripen. If grown under glass the plants should be shifted as often as the pots become full of roots, and be finally potted in 11-inch pots. They must be well supplied with water, their shoots must be thinned-out to prevent crowding, and should be trained to a wall or trellis, stopping them one or two joints above the fruit. The foliage must never be allowed to flag from want of water, and when the fruit is set and swelling liquid manure may be given two or three times a week. A compost of three parts light turfy loam, and one part old cow dung or well-rotted manure, with a free admixture of sharp sand, will grow Tomatoes well, good drainage being given.

CAMELLIA LEAVES BROWNED (*J. W.*).—The leaves seem appear scorched by the sun shining upon them whilst wet. Admit air earlier in the morning, so as to have the leaves dry before the sun strikes powerfully upon them, and afford a slight shade from 9 A.M. to 4 P.M.

SOWING HERNANDESS PHLOX SEED (*E. G. I.*).—The seed may be sown now in a compost of two parts sandy fibrous loam, and one part leaf mould or sandy peat. Sow in a pan well drained, and cover the seeds lightly, but sufficiently, with fine soil. Give a gentle watering, and place the pan in a house where there is a gentle heat or in a mild hotbed of 70°, keeping the soil moist but not very wet, or the seeds may decay. The young plants should be brought near the glass when they appear, to prevent their becoming drawn, and should have air daily and water as required. When large enough to handle they should be hardened well off, and pricked out in a bed in an open but warm situation, shading them from bright sun for a few days until established, and keeping them well watered in dry weather. In autumn or spring they may be planted out.

TANK (*Idem*).—The tank can hardly have fungus in it, but it may have some Conferva, which must be introduced by the water. We know of nothing that could be put in the tank which would destroy these aquatic cryptogams, and not render the water injurious to plants. The best plan would be to have the tank frequently cleaned out.

FEATHER HYACINTHS' SPIKES DYING (*P. E. J.*).—The treatment of these Hyacinths does not differ from that of the ordinary kind, except that they require less heat, and should be slowly forced. The past hot summer may have had an injurious effect on the bulbs, and failures have been common this season. They should have had a light and airy situation, and ought to have been brought on slowly. The bulbs may have been taken up too soon, or before the growth was complete, and that would tend to cause feeble growth in the following year.

GRAPES ULCERATED (*W. Jones*).—They are what gardeners term severely "spotted." We believe that in every instance it arises from the roots not supplying sufficient sap to supply the increased demand for sap to sustain the general growth. Remove the soil down to the first series of roots, apply some light rich compost, and water freely with tepid water. Admit air freely to moderate the growth.

HEATING BY GAS (*George*).—If you send four postage stamps with your address and order No. 341 of this Journal, you will find in that drawings and descriptions of the various modes of heating by gas.

PELARGONIUM LEAVES SPOTTED (*Lady Subscriber*).—We think the leaves sent were spotted in consequence of their being sprinkled or syringed overhead early in the day, and the sun shining powerfully upon them whilst wet. The same effect follows the failing to give air early in the morning, so as to dry the foliage before the sun becomes powerful. Spotting also results from maintaining too close and moist an atmosphere, and from an unhealthy state of the roots, induced by too close and wet a soil. The remedy in the former case is to place the plants near the light, and admit more air.

GUANO WATER FOR FUCHSIAS (*Idem*).—Half an ounce of guano to a gallon of water is not too strong, and hardly strong enough for Fuchsias; 1 oz. to the gallon would be better, and it may be given two or three times a week, or at every alternate watering.

OILED CALICO (*Idem*).—As a protection it answers quite as well as that unoled; but the latter does not throw off rain. A good mode of proceeding is as follows:—Old pale linseed oil, 3 pints; sugar of lead (acetate of lead), 1 oz.; white resin 4 ozs. Grind the acetate of lead with a little of the oil, then add the rest, and the resin. Incorporate thoroughly in a large iron pot over a gentle fire, and with a large brush apply hot to fine calico stretched loosely by means of tacks upon the frame. On the following day the calico is fit for use, and may be either coated a second time, or tacked on tightly to remain.

CALADIUM ESCULENTUM (*B. H.*).—It will succeed in a warm greenhouse in summer, and in winter also, the soil being kept moderately dry. The roots when kept very dry are apt to decay when water is given in spring. They may be potted in February and brought forward in a hotbed or cucumber frame until April or May. It is suitable for the subtropical garden, but should have a warm sheltered situation, and an abundant supply of water in dry weather.

RIPENING BLACK HAMBURGH AND MUSCAT GRAPES (*Idem*).—Those now in flower will have the fruit ripe at the beginning of July, or in the middle of that month, according to the heat; and the Muscats in the same house will not be ripe at the same time, but succeed the Black Hamburgh in a fortnight or three weeks.

CUCUMBERS NOT SETTING (*J. L. Bousworth*).—Your mode of culture appears sound, and we can only account for the fruit not setting by the high night or rather morning temperature of 70° or 72°. From 60° to 65° would be quite sufficient, and we would lower the temperature to that, admitting a little air at night, and not closing the house so soon, but reducing the ventilation by degrees, and admitting more air early in the morning. The hot water taken from the pipes to warm the spring water, may, if yellow and rusty-looking, be injurious to the plants, but we think the evil is in the temperature, and not giving enough of air.

BANISHING ANTS (*G. T. Butlerfield*).—To drive the ants away you may sprinkle guano over their haunts. Ammoniacal liquor from the gasworks will answer the same purpose, care being taken not to use it too strong, otherwise it will destroy the grass, or turn it very brown. Clarke's compound at the rate of 1½ oz. to a gallon of water will destroy the ants.

DESTROYING WEEDS ON WALKS (*G. Enville*).—The most efficient mode that we have tried is a solution of arsenic, and now is the right time to apply it, but in dry weather only. One pound of arsenic is dissolved in three gallons of cold water and boiled, at ring it while boiling; then add seven gallons of cold water, and 2 lbs. of crushed soda, stirring well up,

and apply to the walks with a fine-rosed watering-pot, taking care to keep it from the Box edging or grass. The above quantity will be enough for 25 square yards.

PASSIFLORA RACEMOSA (*An Old Subscriber*).—It is the nature of the plant to ramble or climb, and you cannot make a bush of it without injury to the blooming; but you may shorten the shoots which grow too rampant and undesirably long, thin the others where too numerous, and train them up or down so as to secure the covering of the pillar and rafter, allowing the shoots to hang down after they show for flower. You may thus have a pillar of bloom, all the more desirable because it is produced on graceful, irregular, and pendent shoots, instead of in the stiff formal manner altogether unsuitable for some plants, this being one of them.

CAMELLIAS and **AZALEAS** (*G. S.*).—Under the glass roof with S.W. aspect, will be very suitable for them in summer, the plants having previously been placed in a house where there is a brisk heat and a moist atmosphere, to secure a good free growth. The ripening of the wood will be secured in the glazed structure you name, and as it is open at one end and the front, there will be plenty of air, which is desirable. The plants should not be placed under the glazed roof until the middle of June. Keep them well supplied with water, and in hot weather they may be syringed in the evening only, so as to allow of the foliage becoming dry before the sun shines powerfully upon the house.

ROSES (*E. I. D.*).—Lady Franklin is a Hybrid Perpetual.

GÉNÉRAL JACQUEMINOT ROSE WEAK (*W. H. B.*).—Probably the soil is not suitable for the stock, as it throws up suckers so plentifully, and we therefore presume your soil is light, and that the Rose is worked on the Briar stock. We advise you to frequently syringe the Rose in the evenings of hot days, to top-dress with cow dung, and to water freely in dry weather, removing all suckers as they appear. In November remove the surface soil from the roots, taking away as much of the old soil as it is possible to do without injuring them, and sever every sucker at its origin. Then replace the soil removed with a compost of equal parts of cow dung and strong loam, if it can be had, adding about one-sixth of crushed bones. Mulch with a few inches of stable litter, and prune the head rather closely in February or the beginning of March.

PLANTING DAHLIA TUBERS (*Amateur Gardener*).—The crown of the tubers must be good, and a portion of that crown with an eye or bud should be secured with each division. Without an eye or bud the tubers are of no use. Could you not plant them entire in the soil in a frame, and when the shoots were a few inches long divide, preserving with every shoot a portion of the tuber, however small? You might then either pot off the divisions, place in a frame for a short time, and well harden off before planting out; or you may plant out the divisions where they are to flower, protecting them from very hot sun and frost by inverted flower pots.

FLOWER-GARDEN PLAN (*A. B. C.*).—We like the plan of the garden, but we would enlarge the square or diamond in the centre, and curve the lines to resemble the lines of all the other clumps. 4, 4, 5, 5, would be improved by yellow *Calceolaria* in the centre.

GRAPES SPOTTED (*C. Swaine*).—See the answer we have given to another correspondent to-day.

VINE DECLINING (*Cliftonensis*).—Some of the blotches on the Vine leaves are somewhat like scalding; but the red appearance on the leaves in addition intimates that the digestive powers of the Vine are deranged.

The roots are probably decaying. [Since the above was written we hear that the Vine is dead.]

VINE TRAINING (*T.*).—The practice of "G. H." is right enough where you have abundant room, but when you wish to make the most of your glass roof, you are quite right in stopping your Vine shoots at one or two joints beyond the fruit.

VINERY (*Constant Reader*).—With Vines against the back wall and Vines in front, we presume the twenty-six Vines planted in the middle of the house have their bearing wood confined to the rafters. We lately described a house near Hitchin, where the Vines are planted in the middle of the house and bear right to the ground. Yours do not do so, we presume, otherwise we think the plan good enough in such a wide house; and we have no doubt the Barbarossa Grape will ripen well in the same temperature as the Muscats ripen so well in.

GRAPES SHRIVELLING (*Huxey*).—The bunches shrivel up, owing either to imperfect root action or the imperfect ripening of the wood last season. Roots sinking too deep are also a cause. The blotching of the leaves is the result of a moist atmosphere, and of the sun shining on the house before the condensed vapour has escaped by ventilation. Early ventilating is the only prevention.

HOTHOUSE (*H. E.*).—Your arrangements will do very well, but you will want at least a third more hot-water piping; in fact, if you require tropical heat, double the piping would not be too much.

VARIOUS (*H. N. O.*).—It is not too early to pinch the shoots of pyramidal trees, if they, as you say, have made early growth. We have pinched ours under glass; not yet in the open air. We are not sure of the grub that has destroyed your *Pelargonium* roots. You did quite right in propagating the stems. Most likely the grub was in the soil, a reason why all soil for pot plants should be carefully examined. Do not keep the *Vallota purpurea* quite dry at any time. The plants will want more water now, they should never lose their green foliage altogether. The Strawberry leaf belongs to the variety *Cinquefolia*, much liked by some amateurs, just as some people think all *Strawberries* worthless except the *Hautbois*.

VARIOUS (*An Old Subscriber*).—The Peach leaves were all dried up. It blighted, it is as well to remove them, and if troubled with insects, clean them by washing or smoking. Tulip seed requires no glass. Sow at once or in the autumn, cover with about one-eighth of an inch of soil, protect with a little moss or leaf-mould in winter, and in from four to seven years you have bulbs strong enough to bloom; that is all you can well expect. As far as we can make out, the planting of the border will look very well; but if you have a walk on each side, we would have *Pelargoniums* on each side alternately with the Roses, and the row of *Gladioli* in the centre we would make up with *Phloxes* and yellow *Calceolarias*. The edgings proposed will look very well.

NAMES OF PLANTS (*W.*).—We cannot name your Cactus from your description. The points you mention coincide with *C. mammillaria*. (*J. G.*).—No. 1, Lesser Periwinkle, *Vinca minor*; No. 2, *Keria japonica*. (*Rev. R. F. Wheeler, Whitley*).—*Claytonia perfoliata*. (*J. A.*).—1, *Orobos vernus*; 2, *Aster* (*Agathae*) *coelestis*; 4, *Dialytra formosa*; 5, *Niphebolus lingua*. (*H. Bottomley*).—1, *Lazula campestris*; 2, *Chrysosplenium oppositifolium*. (*Robert*).—3, *Deutzia gracilis*; 3, *Iresine Herbertii*; 4, *Orxalis acetosella*; 6, *Saxifraga armata*. (*Settle*).—1, *Ceanothus dentatus*; 2, *Aster coelestis foliis variegatis*. (*G. S.*).—1, *Alyssum saxatile*; 2, *Iberis*, too meagre to determine the species. (*Done Brown*).—Certainly nothing else but the common Broom, *Spartium scoparium*. (*A. Taylor*).—1, *Saxifraga ligulata*; 2, *Pulmonaria officinalis*; 3, *Myosotis arvensis alba*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 4th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 28	31.276	30.137	75	37	55	50	E.	.03	Very fine; clear and fine; fine, cold wind.
Thurs. 29	30.245	30.154	61	32	53	50	N.E.	.00	Fine; very fine and clear; fine, overcast.
Fri.... 30	30.101	3.496	64	37	52	50	E.	.01	Very fine; fine, overcast; densely overcast, cold wind.
Sat.... 1	30.103	30.092	55	26	51	50	E.	.00	Densely overcast; cloudy and overcast; clear.
Sun... 2	29.989	29.943	62	41	51	49	E.	.00	Very fine; overcast, foggy; densely overcast and cold.
Mon... 3	29.809	29.836	51	36	51	49	S.E.	.48	Densely overcast; fine, overcast; heavy showers.
Tues.. 4	29.946	29.745	50	35	51	49	E.	.34	Rain; heavy rain; clear, very cold wind.
Mean	30.080	29.986	59.71	34.56	52.00	49.57	—	0.82	

POULTRY, BEE, AND PIGEON CHRONICLE.

EAST INDIAN WILD BREEDS OF POULTRY.

(Continued from page 249.)

THE *Gallus ferrugineus* has had several other designations besides its proper one and those of *Gallus Bankiva* and *Gallus Stanleyi*, such as the native names for it in India, as *Ayam utan*, *Brooga*, and many other Indian provincial designations; also Malayan, Javan, and Burmese names for the same wild bird there also known. The following extract from a work on natural history, is perhaps worth quoting:—"It seems to be generally understood, that our English domesticated farmyard fowls, or their original, was first introduced into Europe from Persia, and not from India, and that the Persian originals were white-skinned, brown-legged birds; while the Indian originals were, or are still, yellow-skinned, yellow and willow-legged birds. It is also our firm belief, that our common farmyard fowls are not traceable to any wild race of fowls now at present in existence, though such an original race did once exist in

Persia and other, not Indian, parts of Asia; but, on the other hand, that our willow and yellow-legged, yellow-skinned varieties of the Game fowls and Game Bantams are clearly traceable to the non-existing or still-existing East Indian Wild Jungle fowl." Malaye, Cochins, and Brahmas being chiefly yellow-legged and yellow-skinned, may also have been the descendants of the yellow-legged East Indian *Gallus ferrugineus*, though so very dissimilar in shape and size. Our white-skinned breeds of English Game fowls, and all other white-skinned breeds of poultry are, I think, descendants of the extinct originals once found in Persia, Asia Minor, and other, not Indian, western parts of Asia. Thus it would appear that the tropical or Indian, and Malayan, Burmese, and Aracanese birds are yellow-skinned with yellow and greenish legs, and that the extinct white-skinned, brown-legged, or horn-colored-legged sorts were of Persia and Asia without the tropics, so that the more northern wild original is extinct, while the southern or tropical wild breed still exists in the yet uncleared jungles of the southern or tropical regions. All the older writers on poultry distinctly assert that our breeds derive their origin from two distinct wild species, the *Gallus giganteus* and

the *Gallus Bankiva*; but there is no record that I know of that the *Gallus giganteus* has ever been found wild, but if it had been found wild there would be no improbability in such a theory, which would be a more probable one than that our large breeds all descended from so small a bird as the *Gallus Bankiva* or *ferrugineus*; but still it is not impossible that in remote times there might have been some larger wild breeds, now extinct by domestication as wild species, though the great size, the unwieldiness, and inferior powers of flight and locomotion, perhaps render it impossible that the Indian Malays were ever a wild breed of poultry. On this point opinions differ, and many arguments may be held on both sides; but it would appear rather narrow-minded to insist that only one wild original breed, and of only one colour, should necessarily be the only original of domesticated poultry, when we well know that there are several wild breeds of the *Gallina*, though the sorts we know now as wild sorts will not well interbreed, nor, it appears, will hybrids between them prove productive. This fact prevents them, with other distinctions, from being all our true original types, and the wild sort, which nearest resembles our tame poultry, has been, of course, selected as the nearest original type.

I should have mentioned with regard to the larger or yellow-legged *Gallus ferrugineus*, that there are only three shades of colour found in them, and not five, as in the smaller and more common wild breed. These shades of colour are Black-breasted Reds, Ginger Reds, and Gingers; the Brown Reds and Ginger Brown Reds, both dark-faced and dark-combed, not being found in this species, which is always yellow-legged, whereas the dark-faced varieties are always dark-legged. If the *Gallus giganteus* could be proved to have ever been found in a wild state, which it is possible it may have been, and have become extinct, though there is jungle cover enough in India for any wild breed to preserve its existence in, it would certainly simplify the theory of the true originals; as supposing the Malays once wild, there would be two distinct originals, one small, the *Gallus ferrugineus*, and one large, the *Gallus giganteus*; the smaller dark-legged and single-combed, the larger yellow-legged and thick-combed; but there is the difficulty of proving that the larger original, the *Gallus giganteus*, or Malay, has ever been wild at all, though, no doubt, other breeds once wild are now existing in a domesticated, and, therefore, in a changed type or form.—TREVOR.

DRAWINGS OF POULTRY AND PIGEONS.

I WISH to add a word on this subject to the excellent suggestion made last week by "E. H. D." By all means have good oil paintings given as prizes of the different varieties of poultry in their respective classes, but still more is this necessary in regard to fancy Pigeons. Beginners do not know the points up to which to breed in order to ensure success, or to guide them in purchasing. The Pigeon books, as a rule, have illustrations atrociously ugly, or they are in a more or less degree incorrect. Mr. Wolstenholme's paintings and engravings are the exception, and they, to use the words of Mr. Equilant, the President of the Peristerion Society, "portray the standard points with a fulness and truthfulness which language cannot convey, and these portraits have been the means of inducing many to enter the Pigeon fancy." One glance at a picture tells more than half a page of description. Good birds and good pictures spread the fancy. I have myself a pair of wonderful Fantails, bred by Mr. Huie. A gentleman, one of the many who saw them recently, said, "Well, if I could but get such birds as those, I would go into the fancy myself." So different and superior, even to an untaught eye, are first-class birds to others of a lower type.—WILTSHIRE RECTOR.

NEWCHURCH POULTRY SHOW.

THE best exhibition of poultry ever held in connection with the long-established Newchurch Society was decidedly that of last week. The arrangements upon the whole were very good, and the Committee are evidently most desirous to do all in their power to carry out everything satisfactorily. The birds shown were mostly of high character, and the competition, therefore, was very severe. We were much pleased to find the determination manifested by the Managing Committee to keep strictly to rules, as instanced in the Selling class, where the regulations limit the prohibitory price of each pen to 30s. It is notorious that by systematic evasions birds are frequently claimed by the owners themselves as soon as the prizes are awarded. In this instance, however, decidedly the two best pens were ticketed as "sold" and "claimed,"

even before the Judge had seen them. The Committee at once resolved that these pens should not be permitted to compete at all, and other less valuable specimens obtained the premiums. This plan, or a rule that no birds can be claimed until the show has been opened for an hour, will soon put a stop to this objectionable practice, as not unfrequently fowls have been put into the Selling class at a price nominally as low as 30s. the pen, although the exhibitor would not care to sell them at £10 or more.

One of the most excellent displays of *Waterfowl*, both domestic and ornamental, we ever met with, was to be seen at Newchurch, and certainly the attraction to visitors was very great. The attendance was very satisfactory, the day being especially fine, and a brass-band contest no doubt attracted many visitors.

GAME (Any colour).—1 and 2, C. W. Brierley, Middleton. *hc*, E. Aykroyd, Bradford. *c*, W. Kirby, jun., Treutman (Duckwing).
 GAME BANTAMS.—1, W. F. Entwistle, Leeds. 2, C. W. Brierley. *hc*, G. Anderson, Accrington. *c*, T. Sharples, Crawshawbooth.
 BANTAMS (Any variety except Game).—1, S. S. Mossop, Long Sattton (Black). 2, T. C. Harrison, Hull. *hc*, H. Pickles, Earby; S. & R. Ashton, Mottam (Black).
 DORRINGS.—1, J. Stott, Healey, Rochdale. 2, N. H. King, Sandfield, Rochdale. *hc*, C. W. Brierley; H. Pickles, jun. *c*, J. Robinson, Garstang.
 COCHIN-CHINA (Any colour).—1, J. Robinson. 2, C. W. Brierley. *hc*, F. Haworth, Newfield (White). *c*, J. Stott, Healey.
 SPANISH (Any variety).—1 and 2, F. Haworth, Haslingden (Black).
 BRAHMA POOTRA (Any colour).—1, W. Hargreaves, Eucup (Dark). 2, E. Leech, Rochdale. *c*, C. W. Brierley; E. Leech.
 HAMBURGERS (Golden-pencilled).—1, T. Sharples, Crawshawbooth. 2, J. Robinson. *hc*, H. Pickles.
 HAMBURGERS (Silver-pencilled).—1, T. Sharples. 2, J. Robinson. *c*, H. Pickles.
 HAMBURGERS (Golden-spangled).—1, H. Pickles. 2, N. Marlor, Denton. *hc*, J. Robinson; S. & R. Ashton.
 HAMBURGERS (Silver-spangled).—1 and 2, J. Fielding, Newchurch. *hc*, J. Smalley, Livesey, Blackburn.
 ANY OTHER VARIETY.—1, L. Biney (Hondans). 2, H. Pickles (Polands).
 SELLING CLASS.—1, F. Haworth, Haslingden. 2, J. Berry, Silsden. *hc*, R. A. Wild, Bury (Partridge Cochins). *c*, A. Stott, Whitworth (Black Red Game).
 TURKEYS.—1 and 2, E. Leech. *c*, A. Stott, Whitworth.
 GESE.—1, W. H. Butcher, Lea, near Preston (White). 2, E. Leech.
 DUCKS (Aylesbury).—1, E. Leech. 2, G. Ratcliffe, Rawtenstall.
 DUCKS (Rouen).—1, R. Duckworth, Ramsbottom. 2, E. Leech. *c*, J. Robinson.
 DUCKS (Any other variety).—1, C. W. Brierley. 2, A. & J. Trickett (Bahama Teal). *hc*, T. C. Harrison, Hull; C. W. Brierley. A. & J. Trickett (Black East Indian); S. & R. Ashton (Carolinian). *c*, R. Duckworth (Call); J. Halstead, Worsthorne, Burnley (White Muscovy).
 ORNAMENTAL WATERFOWL.—1, A. & J. Trickett (Dun Divers). 2, C. W. Brierley (Red-headed Divers). *hc*, C. W. Brierley (Spanish Geese); A. & J. Trickett (Carolinian).
 SINGLE COCKS.—Game (any colour).—1 and *hc*, C. W. Brierley. 2, L. Biney, Manchester (Black Red). *c*, W. Perrin, Nantwich (Brown Red).
 Game Bantam.—1, W. F. Entwistle. 2, L. Einey. *hc*, T. Barker, Burnley (Black Red); C. W. Brierley; Harewood & Buckley, Accrington (Black Red). *c*, W. Buckley (Black Red).

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, was the Judge

SUFFOLK HONEY HARVEST.

I HAVE read many accounts in your Journal of honey harvests in different parts of the country, but have heard nothing of the doings of my neighbours in the eastern counties. As a novice in apiculture I should like to compare books with others similarly situated.

In 1867 I purchased eight swarms in common hives; two were much injured in transit, so much so that the comb was detached from the hives, which did not reach their floor-boards by an inch, and the honey was trickling out, much to the delight of thousands of stranger bees. By narrowing the entrance to half an inch, and using a liberal supply of putty, I made the hives "taut all round," but found the comb still loose in the autumn. On Easter Sunday, 1868, the bees in one hive were apparently dead. I cut away nearly all the comb, when, seeing a bee move, I placed them before a fire, covering them with a cambric handkerchief, and feeding with sugar and water. I kept them in the house all night, and the next morning being fine replaced them on their stand, and although deprived of seven-eighths of their comb, they weighed on the 29th of June over 40 lbs. (the extent of my spring balance); the other hive on August 9th weighed 38 lbs., but from neither did I obtain either swarm or honey. I had from the other six hives 85 lbs. nett of virgin honey and four swarms. I calculate a swarm to equal 10 lbs. of honey, so add 40 to 85 making the average for the six, 20 lbs. 13 ozs., or for the eight 15 lbs. 10 ozs.—WEST SUFFOLK BEE-KEEPER.

P.S.—From my best hive I obtained a well-filled glass weighing 20 lbs. nett, and a capital swarm.

BEVERLEY POULTRY AND PIGEON SHOW.—We have seen the schedule of the liberal prize list offered at this exhibition, and

commend it to our readers the more readily because there need be no fear that the prizes will not be paid. Mr. Hewitt is the judge selected.

STRENGTHENING A WEAK STOCK.

It may interest some of your readers to know of a plan for improving weak stocks at this season, which I have often heard recommended, but this year for the first time tried. Having to make a very long journey, I found myself obliged to dispose of my bees last autumn, and not caring to be wholly without any till swarming time, looked about for some during the winter. The superstition against selling bees, and the practice of destroying all which the peasant does not wish to keep for himself, made it very difficult to find any; but in February I succeeded in securing a very good heavy stock, and one so light that I should not have thought of trying to winter it myself. By feeding, the latter grew somewhat better, but was still very weak.

When the apple blossom fairly opened, and the bees came home heavy-laden, one day last week I transposed the strong and weak hive at twelve o'clock in the day, so that the weak hive gained all or nearly all the bees from its rival, which was full of comb and brood. The latter is now doing well, but of course does not send out the number of workers it did before. The weak stock has nearly built its hive full, and has increased some 8 lbs. in weight. I hope to secure by this means probably a swarm from each hive, or at least shall have a good strong stock in place of a weak one, which would be of no use to anybody.

The operation is most simple, but should only be performed on a warm day when the bees are fully occupied and somewhat tired with a morning's work, otherwise the queens would be in danger. If there be no reason for detaching the floor-boards, the bees will not seem to notice a change.—H. DE R.

NEW BOOK.

Seventy Pounds a-Year: How I Make it by my Bees, and how a Cottager or Others may do the same. By J. W. PAGDEN.

ALL this, and more, may, it seems, be accomplished by the use of flat-topped straw hives with a central aperture 3 inches in diameter for feeding and depriving—in fact, neither more nor less than that so long and universally known to every one, except, perhaps, the author, as "Payne's Improved Cottage Hive." Mr. Filleul's mode of putting a swarm in the old stock's place (called "the new plan of managing swarms"), the feeding-bottle introduced by Mr. Woodbury, and Mr. Pettitt's contrivance for excluding the queen and drones from supers, are also described and recommended without the slightest acknowledgment to either of these gentlemen. Many a laugh has been raised at the expense of poor old Sydserff, who, in the last century, showed how a single hive of bees costing 10s. 6d. would in fourteen years produce a clear profit of £1,300 5s. 6d. But what shall we say of a writer who in this present year of grace, 1869, proclaims that a swarm of bees costing 10s. or 12s. will in six years increase to 729, after paying all expenses, or, as he modestly puts it, "We will suppose it to be only 500, leaving the 229 to allow for all possible casualties?" It is, of course, easy enough to show by calculations such as these that bee-keeping may be made to produce £70 or even £70,000 per annum, but all practical bee-keepers are well aware of their illusory character; and we should be very sorry if any industrious laborer were misled by one of the concluding paragraphs, which assures the cottager that "his bees will supply him with double the income he could gain by expending all his strength and labour in the field; in fact, 'he may then lay down his shovel and his hoe.'"

CAN CRAG STAIN A CANARY?

PERHAPS it may be interesting to some of your readers to hear my experience with regard to crag. Some time ago an exhibitor of Canaries having been disqualified on the grounds that his birds were artificially dyed, brought an action against the committee and won, at the same time saying that the colouring matter on the birds arose from their cage bottoms being covered with crag.

Mr. H. Green, of Ipswich, about a month ago forwarded me a bag of crag, asking me at the same time to use it, and to state my experience in this Journal. I have since that time used it

in the place of sand in a cage with a very light-coloured buff bird, and I find that not the smallest particle of colouring matter attaches itself to the plumage of the bird. I gave the Canary every chance of dyeing itself; it had a bath always in the cage, and bathed continually, but it is still of the same light colour, and the water it washed in never was discoloured in the smallest degree. I find that birds seem to like the crag to eat better than sand or gravel, no doubt owing to the quantity of lime, &c., it contains.—HOWARTH ASHTON, *Polefield Hall, Prestwich.*

OUR LETTER BOX.

* BOOKS (*A Constant Reader*).—Brent's "Canary and Other Song Birds" can be had from our office free by post if you enclose twenty postage stamps with your address.

DUBBING GAME BANTAM COCKS.—NUMBER OF HENS TO EACH COCK (*B. C.*).—Twelve months old is not too great an age for dubbing Game Bantam cocks. It is, nevertheless, better to dub them earlier by two or three months. They do not suffer from the operation. At this time of year eight or ten hens may be put to one cock; earlier in the season, the number must be not more than half. A Bantam hen will often lay from thirty to forty eggs before becoming broody.

EGGS TOO DRY (*Calamity*).—It is impossible, if the eggs produce and nourish the chickens satisfactorily to the time of their hatching, that these should die from any other cause than drought. When the time arrives the inner membrane of the egg is hard, tough, and brown as indian-rubber. No chicken can perforate it. If these eggs, when the time comes, were put into a pailful of lukewarm water, and allowed to remain till their antlers testified they were feeling its influence, they would be safely delivered. Food has nothing to do with the question. A hen, Duck, Goose, Pheasant, Grouse, or Partridge in a state of nature goes to its nest morning and evening with its breast soaked in water, dripping from contact with the wet grass; comes over the eggs, and wets them through. They always hatch well, and so will yours if you wet them sufficiently. We treat ours in this way. As soon as the twentieth day arrives we fill a pail with warm water nearly to the edge; we then put the eggs in it. As soon as the chicken feels the warmth the egg begins to show the fact. It moves and dances about—first one egg, then another till the top of the pail looks like a confused country dance. The eggs may remain in this way for a quarter of an hour, and then be replaced under the hen. Such as show no signs of life when put in the warm water are generally bad eggs.

COCHIN-CHINA COCK BLIND (*X. Y. Z.*).—You do not mention whether the cock has his face swollen; we cannot imagine him blind without, as the Cochins are not subject to roup. If there be swelling, it is probably the result of cold. The treatment will be to wash with cold water and vinegar, and to administer stimulants, such as bread steeped in strong beer, and camphor pills the size of a pea. Being half-bred the birds may have roup; in that case give bread and ale, and use Bailey's pills.

FLOOR OF POULTRY-HOUSE (*E. G. M.*).—We believe the eggs will be fertile after two or three days unless the hens be very numerous. None of your contrivances will do for the flooring. If there are reasons why the brick floor should not be taken up, the best plan we can suggest is to cover it with at least 6 inches of loose gravel, or road grit.

REARING TURKEYS (*B. E.*).—The food of young Turkeys should be like that of young Pheasants. As this statement may not be sufficiently explicit, we will mention, hard boiled egg chopped fine; dough made of oatmeal and milk, bread and milk, curd, and in the case of Turkeys it is well to mix green onion tops chopped fine in the dough. It is most essential to keep the hen Turkey in confinement in a large rip like a crate for earthenware, and even after she has her liberty to let her out only when the sun is up, and the grass quite dry.

STOCKING A DOVECOOTE (*R. H. C.*).—Your best plan would be to surround the cupola with galvanised wire netting, leaving a space in which the birds could walk and sun themselves, and obtain a perfect view of the country all round. Begin with one or two dozen pairs. We know J. Hobbs, bird-dealer, Trim Bridge, Bath. He could readily supply you with the commoner class of Antwerps, Tumblers (Rollers), Runts, and Dragons, all of which would suit your purpose, and be prettier than the Chequered Dovehouse birds, and would breed equally well. They could reach you by Midland Railway, packed in a large hamper or two.

BIRMINGHAM ROLLER, &c. (*Nemors*).—"A Birmingham Roller" is a large coarse-bred Tumbler, in olden days called the Dutch Tumbler. It is longer-faced than any other Tumblers, has feathered legs, ought to have pearl eyes, and is frequently black and white mottled, like the Trumpeter. It is called a Roller because it will tumble or roll over and over and over again, twenty times or more, at the risk of breaking its head against a chimney. The best way of obtaining good birds is to advertise in our columns. Gentlemen then will warrant them in regard to flying, which, as you observe, dealers cannot, as they have not the opportunity of flying their birds.

POULTRY MARKET.—MAY 5.

THERE is no trade such as there used to be for poultry at this time of year. There is still demand sufficient to cause goods to realise good prices, because they are really scarce, but if there were a better supply the usual prices would not be reached.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	0	4	6	Partridges.....	6	0	0	0
Smaller do.....	3	6	4	0	Grouse.....	0	0	0	0
Chickens.....	2	6	3	0	Hares.....	0	0	0	0
Goshawks.....	6	6	7	0	Rabbits.....	1	4	1	5
Ducklings.....	3	6	4	0	Wild do.....	0	9	0	10
Guinea Fowls.....	3	6	4	0	Pigeons.....	0	9	0	10

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 13—19, 1869.	Average Tempera- ture near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
13	Tu	Meeting of Royal and Zoological Societies, [8.30 p.m.]	53.3	38.5	51.1	20	14	4	39	47	44	5	31	9	2	3	52
14	F		63.0	49.4	51.7	16	12	4	41	7	26	6	33	10	3	3	63
15	S	Crystal Palace Show.	64.5	40.6	52.6	15	11	4	42	7	15	7	28	11	4	3	52
16	Su	WHIT SUNDAY.	65.9	42.2	54.1	15	10	4	44	7	14	8	morn.		5	3	52
17	M	[and General Meeting.	65.6	41.0	53.3	16	8	4	45	7	23	9	15	0	6	3	50
18	Tu	Royal Horticultural Society, Fruit, Floral,	66.0	42.2	54.1	17	7	4	47	7	36	10	55	0	y	3	48
19	W	Royal Botanic Society's Show.	66.4	42.7	54.6	14	5	4	48	7	51	11	29	1	8	3	46

From observations taken near London during the last forty-two years, the average day temperature of the week is 54.9°; and its night temperature 41.1°. The greatest heat was 86°, on the 15th and 17th, 1833; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 0.66 inch.

ASPECTS OF SPRING GARDENING.

SPRING gardening, as a development of modern horticulture, needs no apologist. The cheerful glow of life and beauty with which in the opening days of spring it clothes the flower garden, enlivening much that heretofore was only dreary during the months of winter, and by which it asserts both its utility and its adaptability, is an appeal as irresistible as it is appropriate and just. Hundreds of gardens now gay with vari-coloured flowers and divers tints of vegetation attest the charms that spring gardening has for those that plan and realise it in all its pleasant features, and with unwavering fidelity pursue it from year to year. As spring succeeds spring, both the plan devised and the agents employed are changed. A monotonous sameness belongs no more to the spring than to the summer flower garden.

There are, however, many more gardens the spring aspect of which is one of barrenness and waste—in which there is scarcely a gleam of flower-life to lend a particle of relief to the prevailing desolation. It is to incite on the part of the owners of these gardens some desire to emulate what others are doing so well, and with such excellent results, that these remarks are presented. What some can do in a large degree, can be accomplished by others on a smaller scale—there are certain general features capable of imitation, even on the most unpretending form.

With scarcely an exception, all the plants used for spring gardening are hardy, and can be readily propagated. The propagation is mainly done by redivision, and a few store plants divided in the autumn give, in the case of small gardens at least, ample material for the spring display. Others, again, are raised from seeds. A small patch can be sown in any out-of-the-way corner, and transplanted to the blooming quarters at the proper time. These facts, so simple in their character, tend to clear away many difficulties from the paths of those who may be contemplating a trial of spring gardening, but doubt their ability to realise good results. One small trial will not only impart courage, but call into play a loving taste that will originate artistic designs, and a tender regard that will see in many of the common flowers of our gardens a new capability and a fresh beauty hitherto undreamed-of. How truthfully Barry Cornwall sang in the exquisite imagery of our craft:—

"Nature never made
A heart all marble; but in its fissures sows
The wild flower Love, from whose rich seeds spring forth
A world of mercies and sweet charities."

Our first aspect shall be taken from the flower garden at Glen Eyre, Southampton, the residence of Mrs. Eyre Crabbe, a generous patroness of horticulture. Here the prime feature of the spring decoration is in the form of bulbs, Hyacinths being largely used. The very situation of this place—its contiguity to the sea, and the fact that it is embedded as it were in a sheltered wood, added to a genial climate nearly approaching that of Devonshire—are important aids in the development of the spring gardening

so thoroughly carried out by the gardener, Mr. Thomas Stewart. The dwelling-house occupies a considerable elevation, from which is a somewhat abrupt descent by means of a series of successional terrace gardens leading to a pleasant valley below, bounded on the one side by ascending banks of Rhododendrons, and on the other by a Fir plantation, wherein the nightingale finds a home, and at the feet of which

"The fresh winds make love to flowers."

On these terraces is arranged the bright spring display Mr. Stewart so pleasantly makes.

Foremost for their splendid effect and their rich colouring, stood two beds of Hyacinths in the form of an elongated letter S. Each bed was 80 feet in length, and was filled with three rows of Hyacinths arranged in colours, the red Hyacinths forming the centre serpentine line. The massive proportions of some of the spikes of flower was something astonishing; there was such a richness of hue in the flowers that they might well have excited the envy of a Cuthbert or a Paul. Charles Dickens, Baron van Tuyl, and Blen Mourant, single blues, were particularly fine; so was Tempel van Apollo, a fine flesh-coloured variety. Each of these beds was edged with a mottled crimson double Daisy, much grown in these parts, and which in any locality is one of the first to flower. These two beds occupied the whole of one terrace garden, with the exception of two circular beds at each extremity, north and south. One of these beds was filled with White Pottebakker, early single Tulip, and carpeted with the blue Myosotis sylvatica; the other with a Rosa Mundi early single Tulip, having white flowers, tipped with rose, and this bed was carpeted with Aubrietia purpurea.

On the east side of this garden was a sloping bank, some 8 feet in depth, down which this garden is reached by a flight of steps; and on the west side there is a narrow border running the length of the terrace garden similarly to the sloping bank. Each terrace garden has a low hedge of Berberis Darwinii, both on the north and on the south, this was in full bloom, and was in consequence very gay. The groundwork of the sloping banks is formed of Ivies, from the midst of which rise low bushes of Berberis Darwinii, Helianthemums, hardy Ericas, and other flowering shrubs, yielding a succession of bloom. On the other side the narrow border was aglow with large clumps of the double white Primrose, Phloxes frondosa and Nelsoni. Polyanthus Narcissi, &c.

Ascending to the terrace garden above, the arrangement of beds was found to be very different in design. This garden was composed of two divisions, each identical in design with the other. Here Hyacinths were the main feature, but mingled in colours, and edged with strong-growing, showy, fancy Pansies, and in a few instances with yellow or dark Pansies. One bed was edged with what was termed *Silene compacta*, but it appeared to be useless for spring work, as there was no sign of its flowering. There were also beds of Tulips, both mixed as it regards double and single flowers, and also in colours. Of the latter, Golden Prince early single Tulip was very fine and showy. There were also two good beds of Polyanthus

Narcissus, edged with *Myosotis intermedia* of the Royal Horticultural Society, but which appeared to be identical with the common blue Forget-me-not, *Myosotis sylvatica*.

The terrace garden next the house is also extended round to the north side of the dwelling, and here the beds are smaller, and are used to some extent as trial beds for the newer introductions. The larger or principal beds had occupants similar in character to those previously noticed, though with diverse arrangements. A three-lobed bed, for instance, was extremely gay with mixed Hyacinths, edged with a charming line of the Cliveden Blue Pansy. On each side of this were two circular beds, one having single scarlet Tulips and a carpet of the white double Daisy; the other, a bed of Golden Prince early single Tulip, very fine indeed, and a carpet of *Aubrietia græca*. Close by these were four parallel lines of small circular beds, separated by a gravel walk, having two lines on either side, each bed was about 2 feet in diameter, and had a standard Rose in the centre. In a few of these beds the Crocuses, which had been very gay, were just past blooming, one was filled with a rich-coloured double crimson and one with the double yellow Primrose. Among the latter, was one known as the Giant Yellow, of great size, fully double the dimensions of the ordinary variety; another was filled with *Viola lutea* in full bloom, an excellent spring-flowering plant, being much earlier than *V. cornuta*; another had the new white variety of *V. cornuta*, but there was no trace of bloom on it. In one bed was the Imperial Blue Pansy, which appears to be deficient in constitution, and therefore comparatively useless for spring work—a testimony corroborated by Mr. Stewart, of Nuneham Park, who has used it with a like experience. A small bed was occupied by a white Pansy, named White Queen, and which also appears to want constitution, though not to such an extent as the Imperial Blue. Both these, however, may prove to be very acceptable summer-bedding kinds.

A similar small garden to this, but at a lower level, contained other small circular beds, having double white, lilac, and crimson Primroses, pretty single Primroses in three or four colours, *Aubrietia purpurea variegata*, and white and crimson double Daisies. In a small border was a short line of *Bambusa variegata*, a somewhat uncertain bedding plant, but which is said by Mr. Stewart to be extremely gay when the first flush of the young growth is on it.

Reaching yet another terrace garden, there is seen a capital bed of the golden variegated Balm, very showy and bright, edged with fancy Pansies. A splendid bed of Keizerkroon early single Tulip, edged with the sulphur-coloured double Primrose; *Cœleur Ponceau* early single Tulip, edged with *Aubrietia purpurea*, a very fine mass of gorgeous flowers; mixed Hyacinths in beds, edged with double white Primroses; white Hyacinths edged with the pink double Daisy; and a bed of single blue Hyacinths, among which Charles Dickens was again very fine, edged with yellow Pansies.

Such is a general outline of the agencies by which Mr. Stewart makes such a fine show in the early months of the year. The situation is highly favourable to the production of bulbs, and by the time these are out of bloom, the various summer-bedding plants can be placed in their blooming quarters.

Glen Eyre, besides the charming spring garden, has many other objects of special interest. In the conservatory can now be seen the magnificent *Tacsonia Van-Volxemi* with numberless pendant blossoms of rich crimson flowers—a very aristocrat among cool greenhouse climbers. Then there are gigantic specimen *Camellias* growing in different parts of the ground without any shelter, and in the severest weather escaping unscathed, and which, during March and April, are literally covered with flowers. There are also great banks of *Rhododendrons*, some of which were already in full bloom, delicate tints and rich and striking hues being dotted about here and there. On a grassy bank of considerable extent were to be seen some fine specimen *Conifers* of different kinds, all of which appeared to flourish in the peaty, clayey soil so prevalent in this district.

There is also a fine range of plant houses for the growth of Orchids, specimen stove and greenhouse plants, *Pelargoniums*, *Azaleas*, &c., while of Primulas, Mr. Stewart has strains of single and double kinds that can hold their own against any others that can be pitted against them.

At any period of the year a visit to Glen Eyre would amply repay anyone interested in horticultural pursuits. It is one of those places where both skill and intelligence are found allied with a highly cultivated taste, and where there

is no stint of resources; at once an illustration of the advances made by modern horticulture, and a pledge of future triumphs.—*VIA*.

TENDER ANNUALS.—No. 4.

CELOSIAS.—There are several kinds besides the Cockscomb, but there is so little difference between some of them, that they may safely be reduced to three—viz., *C. argentea*, having silvery flowers; *C. pyramidalis aurea*, with orange flowers; and *C. pyramidalis coccinea*, with crimson flowers or spray. The plants produce flowers which are very fine for cutting for bouquets, and handsome for room and conservatory decoration. They are not unlike Cockscombs when young, and they may not inaptly be termed feathery Cockscombs, as they grow rather tall, and the flower spray appears all the way up the stem, hanging down in some cases, and having a larger drooping spray at top, giving the plant a graceful appearance; but in others the spray is more erect, like *Love-lies-bleeding*, and is very elegant.

The treatment of these *Celosias* is very similar to that of the Cockscomb, but the seed should not be sown until the beginning of April, and at the end of that month or beginning of May for a late bloom, and even as late as the end of the latter month or beginning of June. The treatment of the seedlings and the potting are the same as for Cockscombs, only it is not necessary to keep the plants in small pots until the flowers show, though it may be done when dwarf plants are required, especially when they must be in small pots. In this case they need not be shifted into larger pots than those 6 inches in diameter, feeding the plants with liquid manure; but to have fine specimens the plants should be shifted from one size of pot to the other as often as the pots become filled with roots, an 8-inch pot being in most cases sufficiently large; one 6 inches in diameter answers well for general purposes.

The temperature need not be so high as for the Cockscomb by 5°, but the plants cannot have too much light, and should not be crowded together, nor further from the glass than sufficient to allow of room for growing, air being given freely to keep them stiff. A moist atmosphere should be maintained, and to keep down red spider the plants should have a gentle syringing morning and evening; they ought also to be turned round frequently to keep them erect. They succeed on a shelf in the stove, or in a house having a night temperature of from 60° to 65°, and from 70° to 75° by day, with a rise from sun heat and air to 80° or 85°. The plants will be more healthy and sturdy if grown in a cold pit, which, from June to September, may be made to afford a stove heat by keeping the lights moderately close, giving air early, and shutting up early in the afternoon, so as to husband the sun heat. Give water whenever it is necessary, and sprinkle every available surface.

After the plants are full-sized and in full flower, their beauty will be of longer continuance if they be kept in a house with a temperature of 50°, where they long remain ornamental and useful.

A compost of two-thirds loam from decayed turf, sandy rather than heavy, and one-third old cow dung or very rotten hotbed manure, with a free admixture of sharp sand, will grow them well. Free drainage is essential.

GOMPHRENA, or GLOBE AMARANTH.—Of this there are several varieties—namely, alba, white; aurantiaca, orange; carnea, flesh; purpurea, purple; and striata, with striped flowers. All are fine for room, greenhouse, or conservatory decoration in summer and autumn. The plants attain a height of 2 feet or more under good cultivation, and are of stiff, erect, pyramidal habit, affording an abundance of fine globular flower heads that continue a long time in beauty.

The seed of these, as of all tender annuals, should not be sown until there is a considerable amount of sun heat, as without that the plants are liable to be drawn up from the deficiency of light, and the coldness of the external atmosphere rendering it necessary to give a less amount of air than is requisite for this class of plants. They consequently become weak, run to flower prematurely, and are anything but ornamental.

The middle of March is a good time to begin sowing, and seed may be sown up to the end of May; but I consider the best plants are raised from seed sown early in April. A rather light sandy soil from turf a few months old, and broken or chopped up rather finely, is best for sowing the seeds in, well draining the pot or pan, and filling it to within a quarter of an inch of the rim with finely-sifted soil, the pot being in the first instance half-filled with the unsifted soil. The seeds,

being downy, should be placed thinly on the surface, and be covered with fine soil. The pot should be plunged in a hotbed where there is a temperature of from 60° to 65° at night, and from 70° to 75° by day, with a rise from sun heat. The soil ought to be kept moist, but avoid making it very wet, never giving any water so long as it is moist. When the soil is dry water must be given to keep the plants from flagging.

When the seedlings are 2 or 3 inches high they should be potted-off singly in 2½ or 3-inch pots in the same kind of soil as that used for sowing the seed, returned to the hotbed, and kept near the glass, shading them from bright sun for a few days until they have recovered from the potting; then give air freely, so as to keep them stiff and short-jointed. Nothing tends so much to make them so as keeping them near the glass.

When the pots become filled with roots, and before these are much matted, transfer the plants to 4½-inch pots, and place them again in the frame, but without plunging the pots; or, if convenient, the plants may be set on a shelf near the glass, but allowing of their growing without touching it, in a house having a temperature of 60° at night, and from 70° to 75° by day, or 80° with sun and abundance of air. They succeed best, however, in a pit or frame after the end of May, the plants then being strong and in 4½-inch pots. Keep the lights close for a time, give no air except what is necessary to keep the temperature from rising above 75°, and shut up when the temperature declines to 75°. They are the better of a moist atmosphere and gentle bedewing overhead morning and evening, which may be continued until the flowers appear clear of the foliage, and after that it should be discontinued, still preserving a moist atmosphere by sprinkling the walls, floors, &c., with water twice daily, and especially at the time of closing the house or frame.

The plants should be potted as often as the pots become filled with roots. Never allow the roots to become closely matted, but as soon as they reach the sides of the pot, shift the plant into one a size larger, giving the last shift by the time the flowers appear. Pots 6 inches in diameter answer very well for decoration, but for very fine plants 7 or 8-inch pots are not too large, as the plants under good cultivation form perfect pyramids, often 2 feet 6 inches high, and such when well studded with their fine Clover-like heads are splendid. No stakes should be used, but the plant must be turned round frequently in order to keep it straight in stem, and prevent all the shoots forming on one side.

After the last shift, and when the pots are filled with roots, weak liquid manure may be given twice or thrice a-week, at every alternate watering, but it must not be powerful; 1 oz. of guano to the gallon of rain water strained before use through a hair sieve or muslin is quite strong enough.

For successional pottings, richer soil may be employed. The following compost will grow Gomphrenas well—viz., good loam from turf, light rather than otherwise, and one third leaf mould or old and dry cow dung mixed together, the turf being broken and made rather fine, but not sifted, with a free admixture of silver or sharp sand, good drainage being provided. In potting, the plants may be slightly sunk in the soil, but in no case deeper than the seed leaves.

When in flower a drier and more airy situation will improve the colour, and increase the duration of the flowers; in a temperature of 50° they long remain in full beauty. They cannot have too much light, nor can they be kept too near the glass, always allowing room for growing.—G. ABBEY.

FRUIT PROSPECTS IN NORFOLK.

WALL fruit of choice kinds, as Peaches, Nectarines, and Apricots will be very scarce here. Our Apricots, such as the Moorpark, I find on reference to my diary were in full bloom on the 20th of February, owing to the mildness of the season at that time, but sharp wind and frost setting in about the 23rd entirely destroyed all chances of a crop. Protected and unprotected, all seemed to fare alike; in fact, I think, the ordinary protection of evergreen branches, &c., was the worst, as the draught seemed to be sharper there than where no protection was afforded. On a fine old tree of the Red Masculine, which bloomed three weeks later, the bloom was very full and strong, but the crop is very light. Peaches and Nectarines out of doors are all cut off, possibly some of our neighbours may be better off, as our situation is very low, being near the river.

The crop of Strawberries, I think, will be light, owing to the

severe parching of last summer from which, on the light soils, they have never recovered. Pear trees of such kinds as Marie Louise, Winter Nellis, Easter Beurré, Colmars, and some of the other Beurrés are now very full of bloom, and so are Cherry trees, but of the result I cannot say anything at present. Currants, Gooseberries, and Raspberries are on a mass of bloom, showing the result of well-ripened wood, and as the foliage is well advanced, I consider them almost safe. The crop of Apples will be partial, some having no bloom, some middling, and some very good, the best being Scarlet Nonpareil, Graveston, Beefing, Codlins, Ribston Pippin, Ingestrie, Winter Hawthornden, Brandy Apple, and some Russets, but the bloom is mostly on the new wood, another instance of the ripening of the wood by the heat of the season. Plums are pretty well set on the walls. I purpose giving another week some remarks on in-door crops, and the effect of last season on the Vine.—T. P., Gardener to Sir William Ffolkes, Bart., Hillington.

DISEASED PEACH AND NECTARINE SHOOTS

SOME communications which have lately appeared on diseased Peach and Nectarine shoots have induced me to offer a few remarks on the subject.

On taking charge of the gardens here nearly six years ago, I found on a south-east wall four trees, two of which were Peaches and two Nectarines. These trees were by no means old, yet they were full of disease, from top to bottom of the wall I might say, for they had been vigorous enough at one time, and had reached the top of the 8-foot wall. The action of the disease was most curious—one branch would appear perfectly plump and healthy for a foot or two of its length; then would occur a diseased part, having its bark brown and shrivelled, with nearly all the tissues of the wood decayed, except, perhaps a slight strip at its back against the wall; then, again, the branch would appear tolerably healthy, with a little spray bearing a few small leaves; another branch would appear quite dead; and so it was continued over the whole surface of the trees. Occasionally there was a healthy shoot, but with the diseased wood greatly predominating.

After a thorough examination of the trees I came to the conclusion that three of them were capable of being reclaimed, but the fourth was quite past my skill. Accordingly, the whole of the branches of each tree were cut back to within 18 inches from their base; the trees were taken up and the roots shortened in a similar manner, the soil renovated with the best materials at my disposal, and the trees at once replanted, not on the surface of the border as recommended in the communications referred to, but a few inches under its surface. In the following season the trees started into growth freely, and produced some remarkably vigorous shoots, the majority of which were quite healthy. A few shoots, however, exhibited signs of canker; wherever this was apparent it was at once removed.

A pressure of work during the first year prevented me from doing more to the border than giving it a digging of the ordinary depth, and planting it with Potatoes. In this operation, as the earth was turned up, the whole border was found to be full of the roots of the Small Bindweed (*Convolvulus arvensis*). These were picked out as cleanly as possible, but I need hardly observe that the poor starved soil failed to produce anything approaching to a crop of Potatoes. However, as the next winter came round, having more time at my disposal, I determined to alter this, and I accordingly had the border thoroughly trenched, manured, and laid up in rough ridges, care being taken to pick out every piece of Bindweed root that presented itself to notice. From that time till now the trees have prospered; they have produced some fruit, and have grown to a considerable size.

I may here remark, that when the trees were taken up I found that they had been planted so deeply that the stems were quite buried beneath the soil, with the roots deep down in the cold clayey subsoil. The soil proper did not appear to have been stirred deeper than 5 or 6 inches for some time, and therefore it was not very accessible to the action of the sun and air, and consequently buried as the roots were under this inert mass of earth, the transmission of the sap must have been so slow and uncertain as to quite fail to supply the requirements of the branches.

In endeavouring to obtain some knowledge of a disease so virulent in its action as to threaten with destruction trees so young, and but a short time previously so full of health and vigour, I at once turned my attention to the roots, too often the seat of disease. Take away the branches of a tree, and retain

its roots, and it will put forth other branches, but destroy its roots, while its branches are suffered to remain intact, and it will die; and I reasoned that roots buried so deeply under a soil almost impervious to the action of the sun and air, must fail to perform their natural functions at the proper season, and thus a derangement of the system occurs, followed by disease and death. Pursuing the subject further, I next sought for the effect of this deranged system, and concluded I had found it in the exhausted cellular tissue, which, deprived of its sap by the action of the leaves, and failing to obtain an adequate supply from the sluggish roots, became so weakened as to be more than ordinarily susceptible of the influence of the chilling blasts and climatic changes to which these trees on an exposed wall of nearly an eastern aspect were subject. The sturdy Oak, with its rugged bark, hardy constitution, and roots deep down in that cold wet clay is admirably adapted not only to withstand the effects of, but to thrive in, a climate and soil the combined effects of which are but too often the cause of death to our garden exotics. And although these natives of a warmer climate have been cultivated in this country so long, yet they are so delicately constituted that unless the most genial situation, suitable soil, and skilful culture are bestowed upon them, they are almost certain to exhibit signs of decay at an early age, and when all these conditions are complied with, even then failures are by no means uncommon.—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

NEW ROSES OF 1869.

A LITTLE information on this subject, acquired during a short visit to Mr. Keynes's Salisbury Nursery, may possibly be interesting to some of your readers. In his trade list of new Roses for 1869 there are thirty-two varieties: twenty-seven Hybrid Perpetual, four Tea, and one Noisette Rose. These I saw under glass in various stages of growth; most healthy-looking plants, though, unfortunately, none in flower.

The very intelligent foreman, Mr. Gill, mentioned to me the following, most of which had bloomed, as among the most promising. Bertha Baron (seedling from Jules Margottin), Charles Lee, Julia Tonvaie, Madame Creyton, Marquise de Mortemart, Perfection de Lyon, Thyra Hammerick, Victor le Bihan, and Monplaisir. Monplaisir is a Tea Rose, raised by Ducher, a seedling from Gloire de Dijon; it is described as "very dark salmon yellow, large, and vigorous." Mr. Keynes had not seen it in flower, but had propagated it very largely, expecting it to be one of the best of the season. I was shown one of the parent stocks, which was certainly a noble plant, considering all the cutting it had gone through, and with a 4-foot-long shoot of true Gloire de Dijon robustness. The Marquise was also highly spoken of as an improved Mdle. Bonnaire, of the same character, but larger and fuller. This was raised by Liabaud, who thus describes it, "Fresh satin white, flesh colour in centre, large and fine, vigorous, seedling from Jules Margottin." A new and interesting feature this year in the establishment, was a considerable number of English seedling Roses, which last year's fine Rose harvest has tempted Mr. Keynes into propagating. They had only been sown in moderate heat this spring, but were already many of them of considerable size, beautiful little plants, and even some of them with tiny buds, and showing that red would be the prevailing colour. A greater contrast than these to the painful and tardy growth of Rose seeds in the open border, and among all their various enemies, it is not easy to imagine. There seems reason to hope that in a year or two we shall hear from more quarters than one of some new and good English-raised Roses not unworthy rivals of Devonians and John Hopper. In such honourable company we shall all be glad to rank a new friend from Salisbury, let us say the "Wonder of Wiltshire," or a "Keynes' Seedling."—A. C.

LARGE FUCHSIAS.

I SHOULD be very much obliged if Mr. G. Matthews, who, as appears in your last paper, wrote to you from Dunedin, would state the size of the Fuchsia Riccartoni in New Zealand, which he describes as larger than any he has seen in Great Britain or Ireland. Mine (about which I wrote to you once before) measured last year over 100 feet in circumference, although it lost considerably by having been cut away from a gravel walk, and I am curious to know how far the Fuchsia he refers to

exceeds mine, and if possible to know its age. Mine was planted in the summer of 1854, and has had nothing of any kind done in the way of protection, or to promote its growth since that time.—P. F., *Vicar of Kerry.*

[This cannot be answered until time enough has elapsed for our globe to be circumnavigated.—EDS.]

ROYAL HORTICULTURAL SOCIETY.

SHOW OF POT ROSES, &c. — May 8th. — This was one of the Society's minor Shows, and owing, probably, to exhibitors having to prepare for the summer exhibitions now close at hand, there was rather a small display. The attendance of visitors, however, notwithstanding the unfavourable character of the day, was very good.

The principal feature was the nurserymen's class for nine Roses in pots, and though, on the whole, these were scarcely so full of bloom as in some former years, there were several admirable specimens. Mr. William Paul took the first place with fine bushy plants of Anna Alexieff, Paul Ricaut, John Hopper, Beauty of Waltham; Madame Damazin, Souvenir d'un Ami, and Charles Lawson, very full of bloom; Maréchal Niel; and Cœur de Lion, fine rosy crimson. Mr. Turner was second with Madame Victor Verdier, Dr. Andry, Charles Lawson, and Marguerite de St. Amand, all of which were fine, the others being Madame Margottin, Souvenir d'un Ami, Céline Forestier, Leopold Hansburg, and Madame Eugène Appert. Messrs. Paul and Son were third, with plants which were beautifully covered with flowers, but these had mostly lost their freshness. In the amateur's class, Mr. James, gardener to W. F. Watson, Esq., Isleworth, received a second prize. The best single specimen was a well-grown, well-flowered plant of Madame de St. Joseph, from Mr. Turner; Mr. W. Paul being second with La Rhone. Prizes were likewise offered for twelve new Roses of 1867 or 1868; and for these Mr. Turner was first, and Mr. W. Paul, on whose card were the words, "not for competition," second. Mr. Turner had Baronne de Rothschild, large, full, delicate peach; Duchesse d'Aoste, deep rose; Clotilde Rolland, blush, with a deeper-coloured centre, very full; President Willermoz, bright rose; and Miss Ingram, pale blush. These were the best; among the others were La France, Madame Alice Duresau, Pitord, Souvenir de François Ponsard, Marie Cirodde, and Reine du Midi, but all of these were more or less rough, and the same remark holds good of several of those in Mr. W. Paul's collection. The best in this appeared to be Vicomtesse de Vézins, bright pink with a salmon pink centre; Baronne de Rothschild, President Willermoz, Duchesse d'Aoste; Tea Jean Pernet, yellow; and Tea Reine du Portugal, yellow, shaded with copper colour. Madame Marie Cirodde was promising. In the miscellaneous class Messrs. Paul & Son received an extra prize for a collection of plants in pots; and another extra prize was awarded to Mr. W. Paul for eight boxes of beautiful cut blooms, some of the most noticeable being Maréchal Niel, Madame Marie Cirodde, peach; Belle de Bordeaux, Madame Pauline Labonté, Céline Forestier, Climbing Devonians, and Gloire de Dijon.

Following the order of the schedule, Auriculas came next, and of these the only collections came from Mr. Turner, of Slough, and Mr. James, of Isleworth, who were respectively first and second in both classes—namely, that for nine edged, and that for nine selfs and fancies. In the former Mr. Turner had Miss Giddings (Read), Exhibitor (Turner), Waterloo (Smith), Sophia (Chapman), Maggie Lander (Lowe), General Neill (Trail), Richard Healdy (Lightbody), Lancashire Hero (Cheetham), and Earl Grosvenor (Lees). In Mr. Turner's other collection were Spalding's Metropolitan, and Turner's Charmer, much alike in colour but differing in size, and several fine Alpines, as Merit, Mitre, and Jessie.

Mr. James was the only exhibitor of Polyantheses, and had a first prize for well-grown plants, one of the most showy being Golden Flece, velvety reddish crimson, with a golden edge. The same exhibitor was also first for Pansies in pots, Mr. Hooper, Widcombe Hill, Bath, being second, and both received extra prizes for cut blooms of the same flowers; Mr. Bragg, Slough, likewise exhibiting Show and Fancy kinds.

Of Lily of the Valley, Messrs. Reeves Brothers, Notting Hill, sent remarkably fine pots, and had a first prize; and Messrs. Salter were second with the variegated kind, also very fine.

For six boxes of Alpine plants, Mr. Ware, of Hale Farm Nurseries, Tottenham, took the lead, exhibiting a numerous collection, of which the most beautiful were *Erinus hirsutus*, *Anhretia Campbelli* and *greca*, *Saxifraga granulata*, *Phlox stolonifera*, *Phlox subulata* Nelsoni, *Phlox subulata frondosa*, the intense blue *Lithospermum prostratum*, *Sempervivum arachnoideum*, *Chelidonium majus*, and *Phlox setacea*. The surface of the soil in these boxes was strewn with stones; Messrs. Salter, who took the second prize, had the soil carpeted with *Mentha corsica*, *Thymus serpyllium lanuginosus*, *Sedum glaucum*, *Saxifraga hypnoides minor*, *Acaena nove-zealandica*, and *Arenaria balearica*. The ground covering of these was neatly studded over with a variety of plants, such as the Acantha-leaved Daisy, *Anhretias*, *Saxifragas*, *Sempervivums*, *Sedums*, and *Lysimachia nemorum variegata*. Mr. Ware also exhibited in the miscellaneous class a fine collection, for which he obtained a second prize, containing three beautiful basketsful of *Phlox subulata frondosa*, and the same number of *Alyssum saxatile compactum*, together with hardy ornamental-leaved plants, as

Fankias, *Bambusa Fortunei*, *Sedum Sieboldii variegatum*, *Veratrum viride*, and *Vitis heterophylla variegata*.

For *Rhododendrons*, Mr. Wilkie, Oak Lodge, Addison Road, Kensington, took the first prize for six plants of three kinds, and for a single specimen, the plants in every instance unnamed. Messrs. Standish & Co., Ascot, sent a large plant of *Regina*, pale rose, with a deeper-coloured edge, but not fully expanded; and, as mentioned last week, the fine *Sikkim Rhododendron Nuttallii* was blooming in the conservatory, where, as Mr. Eyles informs us, it now does so every year.

Messrs. Standish received the first prize in the miscellaneous class for a collection of plants, most of which had been shown at the Floral Committee on the previous Tuesday, as *Rhododendrons* Madame Vander Cruyssen and Mdlle. Christine Nilsson, double-flowered *Pelargoniums*, *Struthiopteris orientalis*, and variegated Maples, besides which they had four plants of the green-leaved *Aucuba*, grafted on clean stems about 2 feet high, and loaded with berries. Mr. Turner received second and third prizes for sixty-four Tulips and a collection of plants, including *Colons Princess Royal*, baskets of Mdlle. Christine Nilsson and Mrs. Heady Tricolor *Pelargoniums*, Bright Star, white-variegated, and *Azalea* Mrs. Turner, pale salmon, distinctly spotted with crimson in the upper petals. Mr. Kinghorn, of Sheen Nursery, Richmond, sent a group of his *Azalea Lizzie*, which received a first-class certificate from the Floral Committee two or three years ago; Mr. James, herbageous *Calceolarias* and hardy Ferns, for which he had an extra prize; and Mr. Hooper, Bath, received a similar award for *Ranunculuses*. Lastly, Messrs. Low & Co., of Clapton, sent a dozen plants of *Genista Everestiana*, covered with showy golden-coloured flowers.

AUCUBA JAPONICA FERTILISING.

"GULIELMUS" is correct when he remarks that his article on the *Aucuba japonica* has been misread by me, and I beg to apologise for my error, and at the same time admit my inability to offer any explanation of M. Carrière's *Aucubas* producing berries long after the male plants had flowered; for even allowing the possibility of pollen having been shed over the immature and consequently closed female blossoms, and that for weeks it retained its fertilising properties, how could that pollen gain access to their pistils? Permit me to add that the opinion I hazarded, that unfertilised *Aucuba* berries, which for weeks maintain a healthy appearance, may during that period be susceptible of impregnation, is still an open question, and one that merits investigation. The reasons that induced me to arrive at this conclusion arose from having observed that a plant of *maculata* that had been all the winter in a dwelling-house and quite apart from male influence, had flowered and formed berries long before it was brought into theinery where my *Aucubas* were seeding. These berries were carefully examined with a pocket lens, when to my surprise several of them exhibited the same viscid appearance as unfertilised flowers. A professional gardener was requested to examine them, he confirmed my opinion, and as we both have had considerable experience in hybridising, I felt that there were sufficient data to warrant me in calling attention to an apparently novel fact.—A. C.

[Cucumbers and other fruits are produced without the female flowers being fertilised, and so may *Aucubas*, but they never produce seeds capable of germinating.—EDS.]

CATS VERSUS NEMOPHILA INSIGNIS.

I THINK if your correspondent will try the following simple remedy he may save himself the trouble of taking cats and bricks to the river. Let him purchase a few ounces of cayenne pepper, put it in a pepper box, and the last thing before dark, dredge the pepper lightly all over the plants. A calm and dry night will be the best for doing it, and let it be repeated every few nights, especially after rain. I saw this remedy tried some years ago with effect. A large yard dog when let loose in the morning would go to a fine young plant of *Laurustinus*, and back himself right into the middle of the bush; this was rather an annoyance to the gardener, who thought of the remedy as above, and applied it as I have stated with the most complete success. A man had to go and open the gate every morning after that to let "Bingo" out into the road, for neither that plant nor any other would ever serve Bingo's purposes afterwards. If your correspondent had seen him try every corner of that garden to get out after being cayenned by the *Laurustinus*, I think he would have concluded that Bingo did not like it, or that he was mad, as the owner thought him at first.—ROBIN ROVE.

HORTICULTURAL CRICKETING.—The members of Carter's cricket club (employees of Jas. Carter & Co.), commenced the

season at Battersea Park on Saturday last. The married contended with the single, and the Benedicts secured an easy victory.

FLOWER SHOWS.

SINCE my last paper on this matter was written, it has happened singularly enough, that the subject has apparently forced itself on the consideration of the Council of the Royal Horticultural Society, and a meeting has been summoned for the purpose of considering the very point on which I laid a good deal of stress—viz., the size of the pots in which plants are exhibited.

In advocating, as I do, an alteration in this matter, let me distinctly say that I do it entirely irrespective of the complaint made on the subject of flower shows. I do not believe in there being just ground for complaint. I do not say it in any spirit of ill-feeling, however others may give me credit for it, but there never can be a show at Kensington worth looking at in an artistic point of view. Why, I have seen there plants numerous enough, and good enough, to form two or three good exhibitions; but what can you make of those long gloomy corridors, with side lights, and a hot broiling conservatory, where cut flowers wither before the day is well begun? and all these choppings and changings will never mend the matter. Now that the Council have no money, it will be, I suppose, impossible to retrace their steps, and let us hope that when the Central Hall of Arts and Sciences is open, they may find a more fitting place, for, as I have said, there is room enough for all; but I have mentioned this because these complaints about the non-success of flower shows come mainly from Kensington.

I hold that it is the duty of all who have the management of these things, not to give way to that spirit of sensation-seeking, which is one of the curses of the present day. An international exhibition is a very good thing, but it can only be held very rarely, and it would be very absurd to find fault with other shows because of the recollection of the Great International Exhibition, which so far surpassed all others, being fresh in our memories. Flora is too modest a misdeed to need any meretricious ornament; only let her productions be set forth in a plain and good setting, and she needs and ought to need nothing else, but she is worthy of that at least. Music is admirable, of course, but I would never, where I had a voice in the matter, in town or country, degrade a flower show by mixing up with it the genteel vulgarities I sometimes see and often hear of.

In advocating the introduction of classes for smaller-sized pots for all kinds of plants, whether hardwooded or otherwise, I do so for several reasons, and as much in the interest of exhibitors as of visitors; and let me say what I mean by small pots to be, 6-inch pots for *Pelargoniums*, *Fuchsias*, *Calceolarias*, and other softwooded plants, and 16's, or 9-inch pots, for stove and greenhouse plants, *Orchids*, &c. I have named a larger size for the latter, because the same method of culture cannot be adopted for both. Copious supplies of liquid manure may be given to the *Pelargoniums* for example, and so you may produce large plants in very small-sized pots, whereas you cannot treat the Heath in the same way.

1. It would greatly curtail the expense to which exhibitors are exposed by the present system.—Look, for example, at Mr. Turner bringing up his nine *Azaleas* from Slough, or Mr. Fraser his *Pelargoniums* from Lea Bridge. Leaving out of the question such distances as Rugby, Cheltenham, &c., what will the largest prize offered and obtained do towards the expense of such an exhibition? Consider that one large house that would grow some hundreds of pounds worth of saleable stock is devoted to that which may produce only £15; then put to the account the time occupied in potting, training, tying these plants; then hire of horses and vans for a couple or three days, the expense of men in London at the exhibition, &c., and then what margin of profit will be there? None; and hence it is no wonder that such men get tired of it, even though they may be at the top of the tree, and one after another withdraw from it. "Look," said a nurseryman to me the other day, pointing to a house full of nice little *Rose* plants, worth at least 2s. a-piece, "what should I do with this if I were to grow *Pelargoniums* for exhibition? it would hold about a dozen plants. No, no, I can manage better than that." I know it is sometimes said it is an advertisement for the exhibitor, and brings him into notice; very true, but it is a very expensive kind of one, and he could manage quite as well with smaller plants.

I very much wish, too, some well-meaning people would get this notion out of their heads, that societies confer an immense favour on nurserymen by offering them prizes which do not half compensate for the expense and trouble they are at; while as to private growers, I do not wonder, with all his love for his garden, that Lord Cornwall, or Sir James Arbuthnot, objects to having his houses filled with huge unwieldy plants, which are only permitted to be seen now and then, and are in a constant state of tying, training, &c. This would be all obviated if classes were introduced for smaller-sized pots.

2. *It would enlarge the area of competition.*—Suppose a grower fired with the noble desire of entering the horticultural race-ground, and of running his steed there, were to try to put his plans into execution, the very first thing that would suggest itself to him, would be, What possible chance can I have, unless I can buy some of those large plants which have already been engaged in the race? And so he hesitates, and finally decides not to attempt it. Let me take Pelargoniums. For years the first and second places have been maintained with varying success by Messrs. Turner and Fraser. Other nurserymen attempted to compete, but they draw off one after the other; their plants were some years old, and unless you had plants of a similar age, it was not within the bounds of possibility to compete with them; but if a class had been open for small plants in 6-inch pots, would not many have entered into the arena, and tried to win their spurs in Flora's tournament?

3. *It would be of greater practical benefit to horticulture.*—We are certainly more interested in looking at things which come within the reach of our own pockets and exertions, than by those which are beyond them. Now, when a visitor to our shows sees these enormously overgrown plants, he (or she) at once says, I can never attempt this, and so passes on to something more within reach. Hence the space in front of the great collections is invariably clear, while the small pot Roses, the cut flowers, and things of a similar character, have always a host of admirers. Moreover, it would give us a far better opportunity of seeing what are the merits of new plants. Take Pelargoniums as an example. A new variety of first-class merit is brought forward, it receives no end of certificates, and then retires into private life. About five or six years afterwards, by the time you have had, perhaps, some three or four dozen newer ones to look at, it has attained its majority, can support a sufficient number of stakes, or rather is supported by them, and then, of a fitting size to appear in company with other full-grown plants, it reappears. Now, all this would be altered if we could get a class for 32's. Good handsome plants can be produced in them, and hence the newer and better kinds would come forward this year. Mr. Turner has sent out some of the best fancy Pelargoniums ever seen, but when shall we see them again? Not for some years unless some alteration be made. And so it is with new and rare plants. How many are discarded after a time, because they are not good exhibition plants—that is, will not bear twisting, torturing, staking, and all sorts of barbarities! An inferior plant that will patiently submit to all this is preferred. Then there is another point not to be disregarded; we are in these days trusting a great deal to flowers and glass for the ornamentation of our dinner tables, rather than to heavy masses of plate, and it is just plants of these sizes that would be the most desirable, and we can thus see which are best suited for our purpose, so that in all these matters we should be serving the true interests of horticulture by insisting on smaller pots being used.

4. *It would certainly conduce to a better arrangement of horticultural productions at our shows.*—I suppose we never have seen so grand a display as the International Exhibition, and never have Mr. Gibson's unrivalled talents as a landscape gardener been so marvellously shown as then. Yet surely, notwithstanding the wonderful masses of bloom of the Azaleas, &c., a more pleasing effect would have been produced by smaller plants equally well done. Just look at some of the photographs taken of the Exhibition, and see what formality it displays. Moreover, where these plants are once fixed they must stay, it would be idle to attempt to move them, however great the mistake may have been in placing them in the position they occupy. Were the plants smaller they could be the more readily moved. If along with this the great societies would undertake to do what the zealous curator of the Glasnevin Gardens, Dr. Moore, does for the Royal Horticultural Society of Ireland—grow some fine Palms, Ferns, &c., to give verdure as a counterfoil to the mass of colour, I, for one, feel that a great advance would be made in the arrangement of our shows. However, as I have always maintained so I still hold,

the plan of the Royal Botanic Society is as near perfection as possible, and I do not at all join in the cry, that they manage these things better in France.

Now, it is idle to talk about the folly of restrictions and such-like things; we must have restrictions. Those who complain of any attempt to reduce the size of pots, would hardly relish seeing huge tubs twice as big as their pots brought in. Restrictions have been made, and all I am contending for is making them a little more stringent. I would allow some classes to remain, but I hope to see the skill of our horticultural giants show us what can be done in small pots as well as the larger ones they have hitherto used.—D., Deal.

CRYSTAL PALACE FLOWER SHOW.

GRAND flower shows at the Crystal Palace are always highly attractive, the number of visitors annually ranging between 15,000 and 20,000. The ample space at command for the show and promenade all under cover, and protected from weather, enables arrangements wholly unattainable elsewhere to be carried out with certainty for the comfort of visitors.

The show of the present season, Saturday next, May 15th, will be of unusual extent. In stove and greenhouse plants, Azaleas, Orchids, Pelargoniums, and pot Roses, large displays may be looked for. The novel feature of prizes for the three classes of bouquets—viz., wedding bouquets, ball bouquets, and vase bouquets will be most interesting, leading to great competition, not only amongst the English and continental *bouquetistes*, but also among the large number of lady visitors and other private cultivators, who, from the entries being made (if wished) under initials, will have the opportunity of privately entering the lists, and giving the public some idea of the artistic ability and taste in the display of flowers, which characterise so many in our domestic circles. The ornamental gardens of Rockhills will be open during the afternoon, to enable visitors to inspect the great *Wistaria sinensis* now in full bloom.

BEET AS A FLOWER-BORDER PLANT.

I FIRST used Beet as a flower-garden plant six years ago. Having a large extent of flower beds and borders to fill, I was very desirous to use as many effective colours as I could command. Although I had then never seen Beet used for ornamental purposes, I had often thought what a pleasing effect it would produce along with almost any good contrasting colour. My desire was to obtain the dwarfest-growing sort I could, and having in former years grown Nutting's Dark Select Beet, and having proved its capabilities for several years when grown in the usual way in the kitchen garden, I determined to try it in the flower garden. For this purpose I sowed it in pans in the middle of March, and placed them on gentle bottom heat. As soon as the plants could be handled, which was in about three weeks after sowing, I had them put singly into thumb pots, taking care to cut back the leading root. My object in doing so was to prevent strong growth and their forming what we all like to see in Beet when grown for kitchen use—namely, a long and handsome tapering root.

The first season I tried Beet in the flower borders its appearance exceeded my expectations. I had one row about 150 yards in length in a gracefully curving border, with a grass walk, 9 feet wide, in front. The border was made to slope towards the walk, and shrubs behind filled up all the corners, giving the border a uniform width. The shrubs being newly planted, and consequently small, I had the tall-growing *Ageratum mexicanum* planted in front of them, then a *Nosegay Pelargonium*, the Beet for the middle row, and *Aurea floribunda Calceolaria* in front, with, next the grass, *Lobelia speciosa*. Thus there were in all five rows, forming the ribbon border. I had the same number of rows in the opposite border, but no Beet. During that season some hundreds of visitors saw the gardens, and when an opinion could be elicited from any of them while viewing it from a short distance, it was to the effect, "Ah! that border having the dark and glossy shining leaves in the centre is by far the most telling." And many were the inquiries, What new and wonderful-looking plant have you in one of your long ribbon borders? It has such a beautifully dark and glossy leaf, altogether forming quite a new feature in ribbon-border decoration. Such were the expressions of surprise and inquiry that were addressed to me during the first season I used it.

I also used one row of Beet in the formation of a border of ornamental foliage, about 25 yards long, and that, too, not

formed with expensive snbtropical plants, but of common flower-garden plants. When people have a large extent to fill, they are generally very desirous of adopting as many different modes of arrangement, by way of giving variety and interest, as their means will permit and their minds produce. As I have already stated, the border of ornamental foliage was filled with common plants, but it gave an agreeable variety, and had a softening influence, distinguishing it from the other borders, where more brilliant and lively colours were used. This border had a background of low shrubs, planted on a high bank, and in shape was somewhat like a half moon, having its inner side to the bank and shrubs, and the outer side to the grass. It was composed of five colours. The back row next the shrubs was of *Gnaphalium laetum*, kept well tied up to stakes, upwards of 2 feet high; the next row, *Perilla nankinensis*, which, as well as the *Gnaphalium*, bears cutting-in to prevent unsightly overgrowth; the third row strong plants of Flower of the Day *Pelargonium*, with all the flowers regularly taken off; then a row of Beet, with its dark glossy leaves, far better than the *Perilla*, which in hot weather will sometimes appear as if it had been dusted with flour. Outside of the Beet was Golden Chain *Pelargonium*, and all know how effective it is where it grows well, and, next the grass, *Cerastium tomentosum*, kept within neat limits. Such was the ornamental-foliage border.

I have an impression that a flower border may have its effect enhanced or deteriorated by its surroundings—their colour, and how they are placed. When a border has something close behind it, sufficiently so to make a screen, and of a green hue, it will be found that the eye rests with greater pleasure and ease on a border of flowers than when you have immediately beyond the border a gravel walk, a brick wall, stone wall, or wooden palings.

I kept two or three dozen of the plants of Beet in pots in case of some of those planted in the ground proving too coarse in their growth, which many of them will often be, and which, if not removed and replaced by better-coloured plants, would, to a certainty, spoil the border.—G. DAWSON.

THE CYCLAMEN.

I CONSIDER that the Cyclamen at fifteen months' growth ought to be at least 1 foot in diameter, having a dense mass of thick variegated leaves standing almost erect, and the flowers not more than 2 or 3 inches above the foliage. The flowers themselves should be broad in the petals, about 2 inches in length, nearly round at the ends, and having a slight regular twist in each segment of the corolla.

I will give a description of how I proceed from the commencement, as I generally prefer raising my own plants from seed. It evidently most readily degenerates, as is the case with most of the Primulaceæ, and therefore some judgment is necessary in cross-breeding these, but which is easy, and in the majority of cases satisfactory, if the result is noted; and those not having the essential points above described are at once discarded, and not kept to contaminate others. The best time to cross the Cyclamen is as early in March as possible, but it may be done as late as April, although I consider the later it is done after the first week in March, the less chance you have of obtaining the wished-for result, as all flowering plants are more or less fertilised by insects and other sources in the spring and summer months. When the sun shines is the best time to cross your Cyclamen, and it should be done in the following manner: Having selected a plant as male, with good-shaped flowers, take hold of the stalk between the left finger and thumb, just below the flower, and with the right thumb flip the side of bloom, and you will find the pollen lodged on the left thumb nail. Then apply this pollen to the blooms of a plant that has a good habit and stiff variegated foliage, which should in all cases be indispensable in the female. In performing this some care is required, as the female organs are extremely delicate, and will not admit of any rough usage. The pollen should be gently applied to the stigma, and it will be found that at least a small portion has adhered, which is all that is required. I do not think it advisable to cross *C. persicum* with *persicum rubrum*, or with any other colour, except for variety; but endeavour to keep them distinct, and improve each kind separately. However, if you have a *rubrum*, for instance, with a bloom of good shape and colour, but nothing else to recommend it, make this the male, and cross it with another *rubrum* possessing good dwarf foliage, and the result, in most instances, will be improved habit combined with a first-

rate bloom. *Persicums* should be crossed in the same way, but endeavour, if possible, always to have these scented. If you wish *persicum delicatum*, you have only to cross a *persicum* with *persicum album*, and *persicum* with *persicum roseum*, to produce another distinct variety. Not more than six flowers, on even a large plant, should be allowed to seed; for if a greater number be retained the seed will be small, and the plants obtained from it, in all probability, be wanting in that vigour which is at all times an important item in the raising of seedlings.

After fertilising the best six blooms, all others should be at once removed, and the plants put in a rather shady part of the greenhouse, but still having as much light as possible; and no place can better suit them than a shelf protected from hot sun by woodwork, about 1 foot or 18 inches from the glass. The seeds are ripe in about ten weeks, are sown at once, and put in an old Cucumber or Melon frame, with a temperature of about 65° or thereabouts. In six weeks the first leaf will be seen pushing itself through the soil; and when such are an inch in length the plants may be transplanted into a pan, still retained in the pit, and carefully shaded from hot sun with thin canvas, as a glaring sun I consider at all times highly detrimental to them, but especially so when the plants are young.

Towards the end of September I select a few of the strongest plants and put them in small pots, still retaining all in the frames close to the glass until the end of October, or even much later, according to the mildness of the season, as I find the young plants do better kept close in an old Melon frame, where a little heat still remains in the fermenting material. As soon as frost or cold weather sets in, all the Cyclamens are placed on a shelf in the conservatory where the thermometer is not allowed to fall below 45°. Through the winter they do not grow much, but if the above temperature is maintained, they will be found to have increased a little, which is all that is desirable. Those plants potted in autumn will require a shift into a size larger pot in April; those in the pans should be potted, and either retained in the conservatory, or, what is better, put in a frame with a little bottom heat for a month or six weeks, then about the end of May put out in a cold frame facing south-east, kept close for a few days, but eventually fully exposed during the daytime.

When the plants are in this cool frame they should never be too much crowded, but allowed some few inches between the leaves, so that air may freely circulate, and prevent that drawn appearance which must at all times be carefully guarded against. The system I am advocating, it will readily be seen, is never to allow a Cyclamen entire rest, but always keep them growing, however slowly, and not, as is the custom with all growers I know, to let them partially die during the summer months; and this, I believe, is the entire cause of that neglect which the Cyclamen has latterly most undeservedly shared with some other good old favourites.

In the management of old plants, if retained, I should adopt much the same system as with the young ones, except that they are not in spring introduced to a frame with bottom heat, but partially shaken out of their soil, potted lightly, not pressed too hard, then placed in a cool frame and kept close for a fortnight or three weeks.

If the weather is hot during the months of June, July, August, and September, invariably sprinkle water overhead once in the forenoon besides the usual watering on soil; but it must be done with a watering pot having a fine rose, otherwise the foliage will be bent down by the weight of water, and eventually the leaves will not be erect and compact, which they ought to be. Another caution I must also give in reference to watering over the foliage, and that is, never to close up the lights for the night until the plants are quite dry, otherwise you will have them lanky, which, as I said before, must of all things be avoided. My plants are generally taken into the conservatory in full bloom early in October, when they continue to throw up flowers until the end of April, if not wished to seed from.

About Christmas a little liquid manure is weekly applied with undoubted advantage, and the bloom will be much prolonged by this timely stimulus; and should you wish the Cyclamen to flower for some months, it is of the greatest importance that all blossoms should be removed as soon as the tips of the reflexed limbs become tinted with brown. As soon, then, as the ends of petals become discoloured, they should be pulled out by giving a sharp snatch to the bloom, so as to detach it close to the corm; for if not entirely removed, the remaining portion decays, and the decomposition spreads over the whole

leaf as well as flower-stalks, and the plant will not be completely recovered that season, even if the evil be detected in its earlier stages. I mention this because occasionally, with extreme vigilance, it will occur in the most unsuspected way, and I would advise some of the blooms and leaves to be removed, and the centre dusted over with sulphur, as the only means of saving the plant, which is sometimes of consequence if a well-known good variety.

The soil best suited, in all stages of the Cyclamen, is one composed of two-fifths coarse leaf mould, the same quantity of very light soft yellow loam, one-fifth dry cow dung, and sufficient fine white sand to prevent running together. The dry cow dung should be collected in fine weather, and it would be advisable, after rubbing small, to pour some nearly boiling water over it to kill all seeds, which are very troublesome if

not destroyed in this way. The leaf mould should also be well wetted, and mixed with cow dung and sand; the loam should be ground down quite fine in a dry state, and mixed with the other ingredients, and you will then have the very best compost it is possible to make to grow the Cyclamen in.

The corm is always seen above the soil, but this should never be so, for the simple reason that the roots in this case will only arise from the lowest portion of it, whereas if buried they will do so from all parts alike; and this must be a very great advantage to so gross a feeder as this plant really is. When the plants are put into their blooming pots I always place a handful of crocks in the bottom, and on the top of them some small pieces of dry cow dung, which is without doubt one of the secrets of success in the cultivation of this gem of the winter season.—H. E. I. C. S. (*The Gardener*).

VINE LEAVES TURNING THEIR UNDER SURFACE TO THE LIGHT.

I HAVE a seedling Grape Vine here which has the strange peculiarity of turning the backs of all its leaves to the light, and no constraint will induce it to turn the upper side to the light. I send you leaves from it, which show how the leaf-stalk bends to effect the purpose. It is inarched on a Muscat, the leaves of which are in their normal state. On entering the house where it grows, the conclusion at once is suggested that some one has severed the Vine's connection with the earth, and that it is in the act of dying, yet it is perfectly healthy, though it has shown no fruit, while seedlings of the same batch are in fruit beside it. It is a cross between the Golden Champion and Black Alicante. I shall be glad to know if any of your readers have met with a Vine having the same habit.—W. THOMSON, *Dalkeith Park*.

[A phenomenon so singular, and, we believe, without a parallel, induced us to ask from Mr. Thomson some further information, and we send his reply:—

"The seedling Vine while making its first year's growth in a pot showed no tendency

to turn the backs of its leaves to the light as it does now, when inarched on the Muscat. I have no other plant of it except one from an eye struck this spring. This has only four leaves on it, and they show no tendency to turn round. There are two seedlings inarched on the Muscat in question, and a closer inspection shows that the other seedling's leaves have to some extent the same tendency to be reversed, as you will observe by leaf No. 2. No. 3 is a leaf from a seedling of the same parentage inarched on a Muscat growing on the next rafters to the other, but showing not the slightest tendency to turn round. The same may be said of other seedlings on neighbouring Vines. The whole of the leaves on the Muscats are perfectly normal, and it looks most singular to see one Vine with the whole of its leaves reversed, and those on Vines on either side all right."

Some few plants have the under sides of their leaves turned upwards (re-upinate), as in *Alstroemeria*

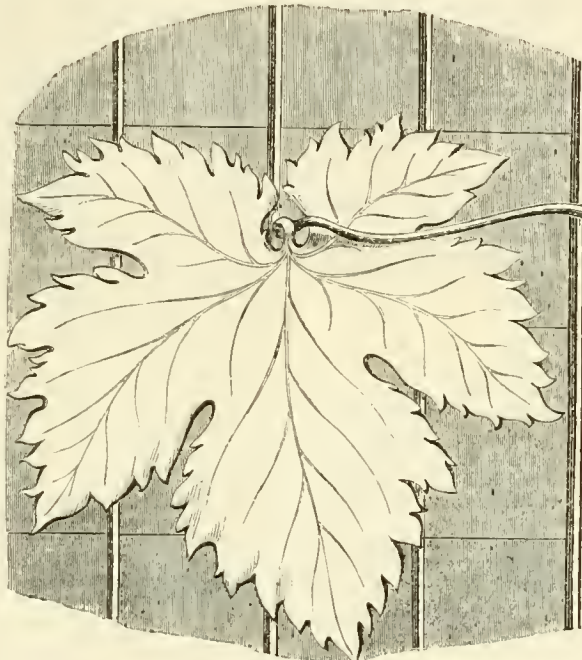
making its first year's growth in a pot showed no tendency | *pelegina*, and *Pharus latifolius*.—Ems.]

HOW CAN I BECOME A FIRST-CLASS GARDENER?

[THE following may be useful to other young men besides a correspondent who asked the above question.]

But for your telling us that you "are very quick at learning," I should say that there are great drawbacks to your becoming a first-rate gardener, as you are now twenty-five years old. Two things will be essential—first, you must learn to write better, and to spell better, and the second is best attained by reading largely and studying the spelling of the words, and also by frequently consulting a dictionary. There is nothing, however, that a man of energy and perseverance cannot accomplish. Besides improving yourself by private study and night schools, if you aim at being a gentleman's gardener, and as you have already worked in gardens at different times, your best plan would be to get into some large well-managed garden, and enter into some arrangement with the gardener to pass through all the commoner out-door work and mere manual labour, such as digging and sweeping, as soon as possible, and then obtain as soon as you can be trusted a charge of one of the departments, as the flower garden, plant houses, forcing houses, fruit department, keeping a diary, and making notes as to every day's work. When you have thus passed some two or three years, then go

into one of our large nurseries, and observe how the work is conducted in the various departments. If you incline to the commercial department of gardening, then choose a market garden, or a nursery, according to the bent of your inclination. It would in ordinary cases be advisable to have a little experience and practice in all the different branches; but at the age of twenty-five it would be more prudent to select one branch and adhere to it as a means of livelihood, as well as of enjoyment. Be assured, whatever department you fix on, you will find that gardening is not all rose water; that there is plenty of difficulty and unpleasantness to contend with; and I mention this all the more, as I have met many who, like you, stated that they "cared for nothing else whatever," who came to care for each and everything except that which they once so much loved. Be assured there is no royal road to success, and ground yourself well at first; learn to use every tool dexterously, and strive to be first-rate in wheeling a barrow and cleaning furnaces, as well as in dressing-up a plant or arranging a flower bed. From want of this grounding it is not uncommon to find a man who has been in a garden for years who could not level a piece of ground, mow without leaving his



work in ridge-and-furrow, and with whom firing and air-giving are merely matters of chance and routine. At the age of twenty-five you ought, if resolved, to do as much in one year as youths at fifteen or sixteen would do in several years. The neighbourhood of London cannot be beaten for opportunities, but there are plenty of schools for learning gardening all over the country.—R. F.

SYRINGING ORCHARD-HOUSE TREES WHEN IN BLOSSOM.

I SEE BY THE JOURNAL OF HORTICULTURE of May 6th that the crop of Peaches, Apricots, and Nectarines is a failing one. I suppose this applies to walls. Here, where we cannot grow these fruits on the open walls, it applies to Plums on walls, and the other fruit above-mentioned in orchard houses; but I do not write exactly to say this, but to give my experience in syringing orchard-house trees when in blossom, as it is so opposed to what I take to be the orthodox opinions on the subject.

Last year, when my orchard-house trees were in full bloom, my man (a common labourer), syringed them very freely; and when I came to discover this, thinking I knew all about it, I told him he had ruined the crop. However, this was so far from being the case that I had the most profuse crop I ever saw in an orchard house; but thinking the success was in spite of, and not in consequence of, this syringing, I took care to warn him against doing so again, and, with the exceptions below, I have no Peaches or other stone fruit. The exceptions are a Peach and a Nectarine, which bloomed much later than the other trees, and my man begged he might be allowed to syringe them. He did so with a very fine rose, and frequently when in bloom, and upon these two trees I have profuse crops.

Pears in the orchard house and on walls are generally looking well, the exceptions being some that I considered most certain bearers, among which are Louise Bonne, Beurré Clairgeau, and some others.

Plums on walls and on standards seemed to set profusely, but when the fruit reached the size of Radish seeds, their growth stopped, and they dropped off by thousands, leaving very few on the tree for a crop.—T. G., *Clithere*.

NOTES AND GLEANINGS.

THE INTERNATIONAL HORTICULTURAL EXHIBITION AT ST. PETERSBURG commences on the 17th inst. Dr. Hogg has been officially appointed the Commissioner and representative there of the Royal Horticultural Society. In answer to several querists, a Russian passport is needed.

— WE have to announce the death, on Monday last, of Sir CHARLES WENTWORTH DILKE, Bart. He died suddenly at St. Petersburg, to which capital he had repaired as the representative of England at the forthcoming exhibition of the Russian Horticultural Societies. The deceased baronet was the only son of Mr. Charles Wentworth Dilke, sometime editor of the *Athenæum*, and also editor of the well-known collection of Old Plays. He was born on the 18th of February, 1810, and was educated at Westminster and at Trinity Hall, Cambridge, where he graduated in law instead of arts. For a short time he studied law; but afterwards gave up his leisure to the affairs of three or four of the learned societies. He took a prominent part in the Society of Arts, of which he was for some years chairman of the Council, and also in the Royal Horticultural Society. At the boards of these Societies he became acquainted with the Prince Consort, whom he assisted in carrying out many public improvements which are associated with the Prince's name. He was one of the first promoters of the Great Exhibition of 1851, and acted as one of the Executive Committee. He was then offered the honour of knighthood, and by the Royal Commission a large pecuniary reward. The knighthood he declined, and the gift of money he returned. When the second Great Exhibition—that of 1862—was proposed, the Government appointed him one of the five Royal Commissioners for conducting it; and on the Prince Consort's unexpected demise, Her Majesty, in a manner that was equally striking and gracious, conferred upon him the honour of a baronetcy. Sir C. Wentworth Dilke entered parliament as member for Wallingford in 1865, which he represented during the Russell-Gladstone and Derby-Disraeli administrations. He was a Justice of the Peace for the county of Middlesex, a Fellow of the Society of Antiquaries, a Fellow of the Royal Geogra-

phical Society, a trustee of the Soane Museum, and an active member of many other public and learned bodies. He was also a proprietor of the *Gardeners' Chronicle*. For some time past he had been in failing health, and the extreme inclemency of the weather in the north of Europe aggravated his disease. He married Mary, daughter of Captain Chatfield, of the Madras Cavalry, by whom (now dead), he had issue Charles Wentworth, the member for Chelsea, who succeeds to the baronetcy.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, the beds are now coming into full bearing, the practice of allowing the shoots to grow longer out of the ground before cutting is becoming more generally adopted and ought to be universal; 1 or 1½ inch below the surface is quite enough. Do not permit any shoots to run up at present, not even weak ones, and as occasion offers give the beds a good supply of manure water with a little salt dissolved in it. *Cape Broccoli* and *Cauliflowers* may still be sown for a late crop, but there must be no delay. Continue to plant out *Cauliflowers* and *Cabbages* from the nursery beds as they become large enough, and keep the earth well stirred about those advancing. Look out for slugs. These are numerous just now. There is nothing equal to frequent applications of quicklime. Plant out the earliest forwarded *Dwarf Kidney Beans* on a warm sheltered border; at the same time try the effect of potting a few in the manner usually adopted for forcing, retain them in heat for a time, and then stand the pots close under a south wall. They will come into bearing before those planted out, particularly if occasional applications of liquid manure be afforded them. *Bath Cos Lettuce*, tie up a few for blanching. A few at a time only should be done, and they must be quite dry when tied or they will decay. Sow successions of *Lettuce* every three weeks; *Mustard and Cress* every four or five days; and *Radishes* every ten days, all in quantities proportionate to the demand. A few of the earliest *Radishes* should be left to produce pods for pickling. *Peas* which are now growing strong and healthy, must have great attention in keeping the surface soil well loosened to preserve them in a free-growing state. Get a ridge prepared, if not done already, for turning out *Cucumbers* and *Vegetable Marrows* under hand-glasses. There is no better plan than the usual one of throwing out a trench 4 feet wide, filling it with fermenting matter, and returning the soil, but if this is not of a light nature there had better be some prepared light compost laid where the glasses are placed. *Tomatoes*, *Capsicums*, *Chillies*, and *Basil* should now be undergoing the process of hardening-off previous to planting out. A portion of the latter three must be retained in heat for an early supply.

FLOWER GARDEN.

Climbing plants should now receive the attention they deserve. Aim at order and regularity in placing and fastening the shoots, by nailing or tying to the wall or trellis. This should be scrupulously attended to throughout the season, it will not only preserve the young shoots from being broken by the winds, but will likewise prevent that slovenly appearance we too often see of climbers rambling in confusion and destroying each other, from want of a little judicious attention and care. Preparations should now be made for bedding-out; if the beds have been properly prepared as formerly directed, let this be done without delay. See that standard *Roses* are properly secured against high winds, and the caterpillar and green fly. Those which were budded last season should be again gone over, and all the buds and suckers which proceed from the stock destroyed. The inserted buds which have made shoots should be stopped back to three joints, which will cause them to take a firmer hold of the stock, and will greatly increase the size of the head. From those which are intended for budding upon this season rub off all the buds with the exception of three well-placed ones at the top of the stock. Make a partial sowing of *Sweet Williams*, *Antirrhinums*, *Brompton Stocks*, and other biennials in the reserve garden. *Pinks* will be all the better for a top-dressing of decayed cow manure, and make a selection of the stem or stems for blooming, bearing in mind that the greater the number of flowers each plant has to bring to maturity the smaller they will be. *Tulips* are now in full bloom; carefully go over the bed, look in hand, and make necessary memoranda as to the alterations requisite for the next season. Probably some tall-growing varieties may be in the first or outside row,

these should be marked to occupy a more central position in the bed; others may be short in stem, these, of course, should not be in the middle. Auriculas and Polyanthus require keeping cool and free from weeds. Top-dress Carnations and Picotees as recommended for Pinks. Tie up the stems as they advance, not too tightly, and thoroughly soak the soil when water is given. Water Rannunculus between the rows occasionally and effectually. By no means stir the surface soil.

GREENHOUSE AND CONSERVATORY.

Many of the commoner kind of plants may be removed altogether from the conservatory, as there will be no necessity for crowding. On the contrary, as none but specimen plants at this season should be allowed a place here, each must have sufficient space afforded it to display its particular claims to notice. Give abundance of air, avoiding drying draughts, and syringes and water when necessary. Some of the commoner kinds of winter-blooming plants may be removed from the greenhouse, and others as they become unsightly must be turned out to make room for the principal specimen plants now coming into bloom. Place them very thinly so as to display their individual charms, and keep the house cool, moist, and shaded, so as to retain the flowers as long as possible in perfection. Be on the alert with young specimens, keep them stopped, and encourage them as much as possible. Such plants as the *Boronia*, *Lechenaultia*, *Eriostemon*, &c., would now be best in a frame or pit, where, while they have a free ventilation, they can be protected from chilling draughts. Syringe the young plants occasionally, and sprinkle the vacant parts so as to keep a moist growing atmosphere.

STOVE.

Many of the climbers in this house will now be growing rapidly and some of them showing bloom, especially the *Stephanotis* and *Allamandas*. If room can be spared to prevent the plants becoming entangled, it is not advisable to train too soon, or probably some of the flowers may be blind. The most forward of the *Clerodendron* will now be showing their bloom panicles, encourage them as much as possible by a brisk bottom heat and plenty of manure water, and guard against red spider and insects of all sorts. *Rondeletias*, *Ixoras*, *Gloriosas*, and the like must be encouraged in a similar manner, as must all young growing specimens. Ventilate freely night and day, and keep a moist free-growing atmosphere. Plants for winter blooming must be attended to, and *Gloxinias*, *Achimenes*, &c., may, as they come into bloom, be removed to a cooler house. Look to successional crops of them, especially of *Achimenes coccinea*.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

It was well that the ground between most of the young crops in the kitchen garden was Dutch-hoed, as this week, up to the 8th, has been showery, doing a vast amount of good to all growing crops, but not the most suitable weather for cleaning, or even sowing. We sowed succession crops of Turnips, Radishes, Lettuces, Cauliflowers, and made a first sowing of Coleworts. We also pricked-out Celery, so as to bring it forward, and sowed for late crops, though but little of this last will be used until the spring months.

We potted-off *Cucumbers*, intended for planting on ridges or in the open ground, chiefly for pickling; as, though tastes differ, we think that *Cucumbers* grown under glass are the sweetest for the table. Some sorts, quite sweet all the summer if grown under glass, are apt to become bitter when grown in the open air. The *Cucumber* is more given to surface-rooting than the *Melon*, and, therefore, may have more surface space to feed in, though a great space to ramble over is seldom of much advantage so far as fruitfulness is concerned. About Sandy and Biggleswade, whence great quantities of the Short and Long Prickly find their way to the London markets, the seeds are sown this month in the open air, and the plants thinned-out much as a farmer would do his Turnips. We question if in a certain space under glass so many fruit could be cut by any other mode as growing the plants in large pots, and using frequent rich top-dressings. The quantity of fruit thus produced is amazing, and plenty of fresh vigorous roots are always to be found near the surface. The manure, leaf mould, &c., used for top-dressing should be sweet, well aired, and free of the spawn of Fungi. Old Mushroom dung is good, but only good if every bit of spawn is destroyed. We have seen *Cucumbers* die off unexpectedly, because the compost used had

spawn of Fungi, which permeated the soil, and the roots could not thrive.

FRUIT GARDEN.

Had the Strawberry quarters surface-hoed, and would dress them now with a little lime and soot if we had enough of each, or of the soot alone. The lime we use chiefly to destroy slugs and snails, or make them shift their quarters. We shall not be able to use straw for the rows for some time, to keep the fruit clean, nor will it be needed for some weeks. A little soot is of great advantage to *Strawberries* just before the flowers open, as it may be expected there will be plenty of rain to wash all clean before the fruit is of any considerable size. Drainings from the dunghill or farmyard, or liquid manures not too strong, are also of much importance, and if given before rains are expected, all the better, and then may be a little stronger when used. After all the concentrated manures now ready for our disposal, we still have a strong favour for the drainings from a farmyard, provided they are not need too strong. However fine Strawberry plants may be, the blossom will not set, and the young fruit if set will not swell, if the plants be dry at the roots. To secure this dampness at the roots at ripening time, perhaps there is nothing better than a layer of clean tan; and in extreme cases of wetness the fruit is less liable to decay than when straw or litter is used.

Later crops of forced *Strawberries* are doing better than the earlier ones, and fearing we should run short before we had a plentiful supply out of doors, we potted with large balls some hundreds of the plants, showing strongly, that we pricked-out in good soil in the open garden last autumn, and plunged the pots up to their rims in a rough hotbed out of doors, merely to encourage the filling of the pots with roots. We also filled a pit with similar plants, turning the large balls into soil at once, but with a similar rough bed beneath them, so as to yield a little heat, and covered them with the sashes which had been used for Neapolitan Violets, turned out to be replanted in beds, and to be brought back again in the autumn. By such means we generally secure a late supply before we obtain them out of doors, and with but little trouble except the transplanting. Of course, with all care, the plants will suffer a little from the lifting, but the little bottom heat soon enables them to recover, and to throw up their flowers strongly. In such beds, as fruit is the object, we generally plant them in rows about a foot apart, and thickly in the rows, according to the size of the plants, and the bulk of the balls. We do not for this purpose dig the ground very deeply in the autumn, but we make it tolerably rich at the surface, or rather for 3 or 4 inches deep, and this encourages the fibres to keep near the surface. Of course, every plant is passed over that does not show flower trusses.

Now, as to time gained, when we thus raise fruitful young plants and plant them in a bed so as to give a little bottom heat, and then cover them with sashes, we generally obtain the fruit eight or ten days earlier than we could by merely placing a box with sashes over a piece of *Strawberries* with a favourable exposure in the open ground. From merely placing sashes over a south border, and boards back and front, and shutting up rather closely early in the afternoon, we have often obtained *Strawberries* a fortnight earlier than in the open ground beside the covered part. This, however, depended much on the weather, for in cloudy, dull weather, but little advantage was gained by the glass alone, not so much as when there was a little heat below the roots. Those who cannot resort to either of these means, may yet accelerate the ripening from a few days to a week, by covering the ground close to the plants, and between the plants, with slates or tiles. We prefer for this purpose red-coloured tiles, as neither heating so fast, nor cooling so quickly as dark-coloured slates.

We thought that the Pear blossom, though abundant, was scarcely so large as usual, but the Apple blossom is magnificent. No season could have been better for late-transplanted trees, the showers came just at the right time. One or two of our large Peach trees out of doors are threatening to die, we believe partly owing to the drought of last season, and a little fly is appearing on others, which will receive a good washing with lime or weak soft-soap water directly.

In the orchard houses hardly any insect has troubled us, and the wood is coming well, and the foliage green and very dark. A few twigs showed signs of the brown beetle, and were either removed at once or cleaned. These houses have been gone over once or twice, as to removing shoots, and want doing again, but there are so many things which must be attended to at once, that we are often forced to compromise matters and strive to do work before any injury occurs. The floors of these

houses are pretty well filled, and we must wait a week or two before we trust lots of plants out of doors. We watered these houses for the first time this season, with some dung water that ran from the farmyard. Previously a dusting of soot had been given to the pots. Used in moderation nothing is more effectual for giving leaves of plants a dark green colour. Twenty or thirty years ago the agriculturists in this district used to send straw to London and bring back soot, and the soot was kept secure and dry until the sowing time for young Wheat, &c., came. Many an artificial manure has been used since then, but, on the whole, we question if the Wheat has improved. The old love, as well as the old custom, seems to have lately returned, for this season wherever we go we smell the soot, and see the Wheat fields coming out in their dark green livery. Amateurs and cottagers should look sharply after the soot from their own houses, as that is sure to be pure, and this may easily be done when a chimney sweep is employed, by arranging that he shall leave the soot behind him, and have a price for his work accordingly. We have known cart-loads of the finest soot go from large establishments, and loads of very inferior material brought back again. We presume that, just as in other trades in these days, there are sweeps and sweeps, but in most cases when we have purchased soot the sweep has supplied us with a pure article.

Tied-in the shoots in the Peach house, exposing the fruit. Removed one shelf of Strawberries to give more air and light to the Peaches, and will have all the floor cleared of plants ere long, as until lately there was scarcely a foot in the length of the house for walking room. We trained and regulated Melons in a frame and pit. We thinned Grapes, and laid out, regulated, and tied up Vines in a late house, where they would grow, so that we have been forced to remove plants from beneath them. After regulating, thinning shoots, stopping, &c., we gave the Vines a good syringing, to help the leaves to get right in their places. These Vines, after a late pruning, had been left roughly suspended, and to afford more room for shelves at the top of the house, the Vine stems had been rather bundled longitudinally there, until, as they grew, we were forced to give them more room. Now, we mention this for the purpose of stating that until the above good syringing, the Vines when swelling and breaking were almost left to themselves as respects damping and syringing, and scarcely a bud refused to break as desired. These Vines became weaker than usual last season, but they seem as if they would improve this year. The difficulty will be to cut enough of bunches away. For years we have wanted to go on doing a bit of a border at a time, and thus renew the whole by degrees; but every season finds as much difficulty as the preceding one, as to obtaining soil, &c. The Vines in the orchard house are coming strong and fruitful, though at first they had only a small piece of soil and a gravel walk beyond to go into, and which walk would make a good border if soil were substituted for rubbish, even if the gravel went on the top again. These orchard-house Vines had no syringing. A slight damping of the floor, except when the Peaches were in bloom, was quite sufficient to cause the young leaflets to bristle with dewdrops in a morning; a very pleasant sight so far, as it is rarely seen on a sickly plant.

We allowed the Vines in the lateinery to grow and ramble much longer than usual without dressing or stopping, because as they suffered from want of moisture last season, or what little they had was too strong, we were anxious for the present to encourage root action, and then to stop and thin gradually, so as not to cause a check. To us the whole question of stopping the side shoots, or allowing them to grow, lies in a nutshell. Where there is plenty of room, allowing the shoots to grow beyond the fruit seems to do little injury to the fruit, and keeps a vigorous root action. But where room is limited, and at an early period at least, some things are required to be obtained beneath the Vines, then nipping out the point of the shoot some one or two joints beyond the fruit is necessary to keep the Vine in something like space, and thus concentrate its powers more. Provided the wood is moderately strong and is well ripened, it matters little how you grow, cut, or prune; every piece of well-ripened wood will be sure to show fruit. For general purposes it will be best to stop at one or two joints beyond the fruit, more especially if free growth is maintained by a few shoots left as leaders.

We have lately received from amateurs several parcels of Vine shoots, some unfruitful, others showing fruit, but running off into tendrils, and that alike on weak and strong shoots, the first partly arising from want of strength, the latter not so much from over-luxuriance, as from deep roots and

imperfect ripening of the wood. Now, even when the roots are rather deep, and in rich soil, and the Vines make tolerably fair wood, you may always have Grapes, provided that wood is ripened by a high temperature and a dryish atmosphere in autumn. Now, as stated a little before, you may have your Vines in such a good state that it matters but little how you train or prune, you may even cut off every spur close to the old stem, and after such close pruning fruitful shoots will come in abundance, and need selecting; but in such a case as the last, we consider that it does matter considerably, as it seems more difficult for the Vine, especially if it have little forcing, to ripen all the side shoots, than to ripen a few grown on the short or the long-rod system. At any rate, we could mention at least a score of cases where the Vines consisted each of one main stem, with short side shoots, cut back to a bud or two every winter, that produced but little fruit year after year, when by training young shoots, and so by degrees dispensing with these spurs gradually, the young shoots of this summer would throw out fruitful shoots from their buds next season. Of course, the thinner these young shoots were grown, and the more exposed to sun and air, the more fruitful they would be. We mention this as an ascertained fact, that in unfavourable circumstances a few young shoots on a Vine, with their fine, prominent buds, will be more easily ripened and hardened than a great number of side spur shoots cut back at pruning time to a small bud at the base, and that, as a consequence, the fine buds on the young wood will be fruitful, and the small buds on the cut-in spur will be fruitless. Some time ago, a friend of ours could obtain nice-looking wood, and but little fruit, but he was so enamoured of the spur-system of pruning, that he could not bear to give it up, and as to raising his deep roots, and giving more fire heat, both were out of the question. Merely as a better chance, he was induced to train a young shoot from the base of the Vine, letting it grow 8 or 10 feet without stopping, and stopping the side shoots from spurs in the usual way. Then, after Christmas, the old stem was spurred-in as usual, and the young shoot was left 7 feet long. The Vine broke well. On the whole of the old spurred stem there were two small bunches. From every bud of the young shoot, with the exception of three near the base, came side shoots showing two or three good bunches each. Nothing is more simple, nothing can answer better than spur pruning, when the Vine is in good health, and the wood can be well ripened; but it is well to know that this system may not suit in unfortunate circumstances so well as an older if not more natural system. We need not enter into the reasons, but we believe the fact remains, that the fine buds on a young shoot will be thoroughly matured when the small buds at the base of a spur shoot will not be matured under the same circumstances.

ORNAMENTAL DEPARTMENT.

We have been very busy, but much as lately detailed; for example, potting, moving, hardening-off, and taking up, dividing, and planting Neapolitan and other Violets.—R. F.

TRADE CATALOGUES RECEIVED.

T. Bunyard & Sons, Maidstone and Ashford.—*List of Bedding-out Plants.*

D. Radclyffe & Co., 129, High Holborn, London, W.C.—*Catalogue of Bedding Plants, Ferns, &c.*

A. Stansfield & Son, Vale Nurseries, Todmorden, Lancashire.—*General Fern List.*

COVENT GARDEN MARKET.—MAY 12.

THE state of the market is much the same as last week, good descriptions of fruit and vegetables being in fair request. Foreign imports include the usual variety. The Potato trade is rather better in the best Lisbon Potatoes, which are now coming in good. Old Potatoes are a complete drug. Among spring vegetables, we have now young Turnips, Carrots, and Cauliflowers.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples.....	½ sieve	3	0	to 4	0	Melons.....	each	5	0	to 15	0
Apricots.....	doz.	8	0	4	0	Nectarines.....	doz.	24	0	36	0
Cherries.....	lb.	0	0	0	0	Oranges.....	100	4	0	12	0
Chestnuts.....	bush.	10	0	16	0	Peaches.....	doz.	24	0	36	0
Currants.....	½ sieve	0	0	0	0	Pears (dessert)...	doz.	0	0	0	0
Black.....	do.	0	0	0	0	Pine Apples.....	lb.	6	0	12	0
Figs.....	doz.	12	0	20	0	Plums.....	½ sieve	0	0	0	0
Filberts.....	lb.	0	0	0	0	Quinces.....	doz.	0	0	0	0
Cobs.....	lb.	1	0	1	6	Raspberries.....	lb.	0	0	0	0
Gooseberries...	quart	1	0	1	6	Strawberries.....	doz.	0	6	1	6
Grapes, Hothouse..	lb.	10	0	12	0	Walnuts.....	bush.	10	0	16	0
Lemons.....	100	4	0	8	0	do.....	100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	doz.	3	0	6	0	0	4	0	6
Asparagus	100	5	0	8	0	1	0	1	6
Beans, Kidney	hd.	2	0	8	0	1	0	1	6
Beet, Red	doz.	2	0	3	0	2	0	3	0
Broccoli	bundle	1	0	2	0	12	0	14	0
Brus. Sprouts ½ sieve		0	0	0	0	3	0	4	6
Cabbage	doz.	1	0	2	0	9	0	1	0
Capsicums	100	0	0	0	0	4	0	6	0
Carrots	bundle	0	8	1	0	4	6	6	0
Cauliflower	doz.	3	0	6	0	4	0	7	0
Celery	bundle	1	6	2	0	1	6	0	0
Cucumbers	sach	0	6	1	6	0	6	1	0
Endive	doz.	2	0	0	0	0	0	0	0
Fennel	bundle	0	3	0	0	0	8	0	0
Garlic	lb.	0	8	0	0	2	0	3	0
Herbs	bundle	0	3	0	0	1	0	2	0
Horseradish	bundle	3	0	5	0	0	4	0	6

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Books (J.P.).—We are unable to publish more than four "wild flowers" monthly, and we purpose continuing them until all our native plants are portrayed, or the work would be imperfect. If we could have published more monthly, the work would now be nearly completed. (J.E.B.).—There is none better than the "Fern Manual." You can have it by post if you enclose 5s. 4d. in stamps with your address.

OUR VOLUMES (A. Lockyer).—They commence on the first Thursday in January and July. The only covers are for binding without the advertisements.

GOANO WATER (E.M.B.).—Not more than half an ounce to a gallon of water. Apply it in the evening once-a-week whilst the plants are flowering.

PLANTING FLOWER BEDS (G.F.J.).—Your proposed border you have thrown into diamond-shaped and triangular figures, the cross of the diamond-shaped figures forming the points of two triangles. The diamond-shaped beds are to be of Tricolor and yellow-leaved Pelargoniums, the triangles white, a row of Beet at back, and a row of Lobelia in front. Beet is a matter of taste; we would prefer *Perilla nankinensis*, or *Amaranthus melancholicus ruber*. The Lobelia will come in in front well if next gravel; if next grass we would make the front *Cerastium*, or white, and the triangles next the front Lobelia.

VARIATED STRINGA (J. Oliver).—This variegated-leaved variety of *Philadelphus coronarius* is well known. We quite agree with you that it forms a very attractive dinner-table decoration.

BEDDING-OUT (A.B.).—The plants of *Viola cornuta*, spring-propagated and strong tufted plants, will bloom freely in summer as well as in autumn. The Golden Feather *Pyrethrum* will grow from 6 to 9 or more inches high, but it stands nipping to any height. It looks best in moist weather, becoming greenish in dry, sunny weather. For the third row we prefer, therefore, Mrs. Pollock to the *Pyrethrum*. For the fifth row, if warm enough, the *Coleus* will be the best, and *Iresine* next best. We find it is of no use to plant out *Coleus* until towards the middle of June. The border will look very well if the plants are of the proper size. We presume the border is to be looked at from the front. A green background will greatly improve it.

PLANTING IN VASES (U.L.).—Nothing will suit your light-coloured vases so well as Scarlet *Pelargoniums*, planted out in the soil.

TRANSPLANTER—HARDY ROSES (H.C.).—The manufacturer is Mr. McGlashan, implement maker, Edinburgh. Jules Margottin, Charles Lefebvre, Senateur Vaisse, Prince Camille de Rohan, William Griffiths, Baronne Prevost, Caroline de Sansal, Maurice Bernsrdin, Maréchal Vaillant, Gloire de Dijon, Madame Victor Verdier, Duc de Czasa. They are hardy, good, and distinct.

ROSE LEAVES FALLING (S.C.).—The leaves sent are not diseased, but have fallen, we think from the plant not having had a sufficiency of water at the roots, and the syringing so frequently with soap and water would tend to the same result. Syringe with water only, admit air freely, keep the plants near the glass, supply water liberally, giving liquid manure occasionally, and place the plants out of doors in June.

GRAFTED MANETTI ROSE STOCKS (Stroud, G.).—Your grafts would no doubt have taken had you placed the stocks in a gentle hotbed, plunging the pots to the rim, and maintaining a moist growing heat. We think had you done that, instead of losing all, nine out of ten would have taken. We should advise your shifting the stocks, as you propose, into larger pots, encouraging a shoot from each, and that will be of a size fit for budding by the beginning of July. But them close to the ground, and if they fail you can graft them next February.

GARDENERS' MICROSCOPE (H.H.).—Send with your address to our office a post-office order for 26s., payable to F. S. Angel, at the General Post Office.

WATERING ROSES (Q.Q.).—It is not too early to water Roses both at their roots and overhead. It is of no advantage to have the water warmer than the atmosphere at the time of syringing or watering overhead, and for the roots it will suffice if its temperature be that of the ground. The

stirring of the ground is quite right, it being as much, if not more, desirable in dry than in wet weather.

WATERING TULIPS, RANUNCULUSES, ANEMONES, AND PANSIES (*Idem*).—In dry weather they should be watered, giving thorough supplies, and not dribbels, which cause more harm than good. Continue giving water until the bloom is past. The Pansies should be well supplied with water throughout the summer, but the others ought not to be watered after the bloom is over.

PLANTING BEDDING PELARGONIUMS IN ANEMONE BED (*Idem*).—You may plant them in the bed with the Anemones, not disturbing the roots of these, and they will not suffer, providing the Pelargoniums be removed not later than the end of September or beginning of October.

COMPOST FOR TRICOLOR PELARGONIUMS (*Idem*).—Two parts loam from rotted turves, light rather than heavy, one part old cow dung, half a part sandy fibrous peat, and half a part charcoal, in pieces from the size of a pea up to that of a hazel nut, adding one-sixth of silver sand, the whole well mixed. Give good drainage, and place the plants near the glass, but shade for a few hours during the hottest part of the day with some light material.

SELECT SHOW PELARGONIUMS (South Wales).—As you confine us to flowers of the last two or three years, the following will, probably, suit you—viz., Troubadour, Lady of the Lake, Captain John, Emperor, Hermit, Example, Rob Roy, Prince Consort, Victor, Woman in Whits, Charles Turner, and Heroine.

SELECT FANCY PELARGONIUMS (*Idem*).—Princess Teck, Fanny Gair, Madame Vilda, Silver Mantle, Victor Hugo, Tormentor.

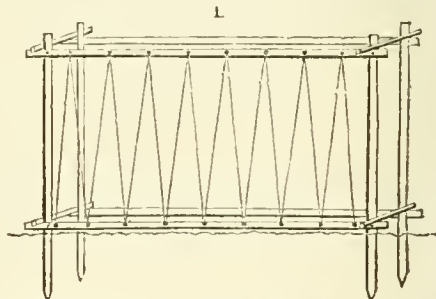
DARK-ZONED PELARGONIUMS FOR CROSS-BREEDING (J.M.).—One of the old varieties, Baron Ricasso, is the best we know for your purpose; it is a variety from which we have produced large numbers of Tricolors in all the sections. Make this your female parent, and by applying the pollen of the Tricolors, both Silver and Gold, to its flowers a great variety of Tricolors of various shades will be the result. The seedlings will not, perhaps, show signs of immediate variegation, but will afterwards break into it.

SEEDLING PELARGONIUM (C.F.O.).—The truss you sent was first-rate, and if the plant is of dwarf habit and a free bloomer, it will be a very superior bedder.

ZONAL PELARGONIUMS (H.P.).—You do not say for what purpose you require them, but we presume for bedding, and for that you may procure Ross Rendatler, Christine, Madame Vaucher, Paul l'Abbé, Amy Hogg, Rebecca, Stella, Lord Palmerston, Clipper, Scarlet Gem, Glory of Waltham, and Lady Constance Grosvenor.

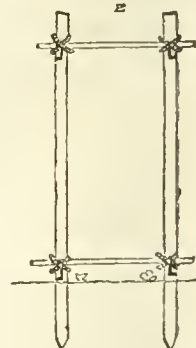
LAWN BROWNING IN SUMMER (*Idem*).—The lawn may be to a considerable extent kept from browning by sowing over it now at the rate of 12 lbs. per acre of Suckling Clover seed; and if the soil is light and gravelly, 3 lbs. of Lotus corniculatus, giving also now in moist weather a dressing of guano or bone dust.

SUPPORTS FOR PEAS (R.G.).—We have had the following in use without repair for several years, and can strongly recommend them. The only alteration we find desirable is that, instead of having the supporters fixed upright, as in these sketches, they should lean inwards, and their tops



touch in this manner—A. We paid sixpence for each bundle of unplanned

deal, and had it painted over with coal-tar. To prevent confusion in the drawing we have only shown one of the hurdles as pierced with holes, and with string passed through them; but, in practice, both are strung alike. Each hurdle is 5 feet long, and 3 feet wide between the two bars; for tall-growing Peas the width might be more. The upright ends are made of deal, and are 4 feet long and 2 inches square. Eight inches of the lower ends are charred and pointed, because they have to be fixed in the ground. The side bars are 2 inches wide and 1 inch thick, also of deal, sunk into the uprights, and then nailed. The Peas are sown in double rows, with a space of 9 inches between the rows. The hurdles are strung with stout wetted string, because when dry it becomes tighter, and rain does not slacken it afterwards. A hurdle is put outside of each row of Peas, and is made steadier by being tied to the one next to it, and the whole made firmer by being united to those opposite, by pieces of wood about 1 foot long, tied as shown at No. 2.



PELARGONIUM LEAVES SPOTTED (S.D.).—The leaf sent is badly spotted either from syringing or from condensed moisture on the leaves, owing to the moisture of the house during the night, and the sun's rays falling powerfully upon them whilst wet. It might have been obviated by reducing the moisture by more abundant air-giving, and leaving a little air at night, so as to keep the moisture from condensing and falling on the leaves. Syringing ought not to be practised in April, or, if it is, air must be given back and front early in the morning, so as to have the foliage dry

before the sun's rays fall powerfully upon the plants. To have the plant in flower at the beginning of July, stopping should not longer be practised. The plants should not be exhibited staked.

ZONAL PELARONIUMS STOPPING (*A Ten-years Subscriber*).—To have them flower in June, the last stopping ought to have been done the beginning of this month; and for flowering in October, the stopping may be practised up to the middle of August.

FLOWER OF THE DAY PELARONIUM SPORTIVO (*A Constant Reader*).—It is not uncommon for the plants to have green as well as variegated foliage. Flower of the Day belong in its variegated form a sport from a green-leaved kind, and to that the variegated sort will occasionally return. We do not know the cause, but from experience expect to find all abnormal forms occasionally producing the normal, whether by shoots on the plant, or from seed taken from it.

PEACHES NOT SETTING—**HEATH CUTTINGS** (*Idem*).—The cause of the Peach blossom failing to set we think is the attack of red spider in the previous year; but if you removed any of the old soil this spring in the process of top-dressing, and destroyed many of the fibres, that would be sufficient to prevent the setting. The best time to put in cuttings of Heaths is when the shoots are from 4 to 6 inches long, and have become rather firm at the base, which may be from June up to August. The earlier they are struck the better they will stand the winter.

SEEDLING PELARONIUM (*J. Houldsworth*).—The leaf sent is unique and beautiful—Ivy-leaved in shape, dark green centre, and a broad bright pink border.

PREFERABLE SIZE OF HOT-WATER PIPES (*Bitterswell*).—As a good medium size, we prefer 4-inch pipes for general hot-water purposes. In all cases where heat is wanted early, as in greenhouses in frost, we prefer 3-inch piping, as the water is so much sooner heated. We would partly on this account greatly prefer for vineries four 3-inch pipes to two of 6 inches in diameter, for though the first are sooner cooled, they are also quicker heated, and the heat will be more uniform. In a 6-inch pipe the lower part of the pipe will be colder than the upper part.

CUCUMBER LEAVES TURNING YELLOW (*A Six-years Subscriber*).—We think most likely you have too much bottom heat, and that the lower part of the soil has become too dry. Poor some water down among the 3 inches of bricks over the pipes. We hope you have no signs of the disease. A yellow leaf is nothing, compared to the curl or spot.

HOUSE SEWAGE FOR ROSES (*Mrs. Stansfeld*).—It should be mixed with at least six times its bulk of water; and be given not oftener than once a week, and not until the flower buds are apparent.

SAVING WISTARIA SINENSIS SEED (*T.*).—We do not know of any process by which you may obtain seed other than by fertilising the flowers, and that may not prove successful, unless your situation be unusually warm, the weather dry and hot at the time of flowering, and a warm summer follow. We have had it under glass, but do not remember that it produced seed.

GREENHOUSE SHELVES PAINTING (*New Cross*).—The shelves ought to have three coats of paint, stone color being the most suitable. It should be allowed to become thoroughly dry before placing the plants on the shelves, and will not do the plants the least harm. The painting is necessary for the preservation of the wood.

PRUNING GERANEA DONNELAARII AND SINNINGIA GUTTATA (*J. B.*).—The shoots of these plants should be annually removed, but not until the plants are beginning to make new growths, though they may be grown on from the top of the old stem; but that is apt to give the plants an ungainly appearance, which should be guarded against.

GLOXINIAS LEODY (*Idem*).—By pegging down the long shoots you will obtain a better bloom than were you to remove the shoots or cut them off to within a few eyes of the soil; but they will, if cut off, start again vigorously, they being encouraged with a gentle increase of heat and a moist atmosphere, keeping them near the glass and shading from bright sun.

APPLYING GUANO TO VINES (*A Man that Wishes to Learn*).—You may give the border a light sprinkling with guano, and at the rate of 1 lb. to 20 square yards, applying it now, if outside, in moist weather, or, if inside, it should be followed by a good watering. The application may be repeated in a month. Two ounces of guano to the gallon of water may be given as a liquid manure in place of the dressing of guano to the surface, and is more immediate in its effects; but we prefer top-dressings and waterings with water only, to waterings with liquid manure, and especially for Vines.

RABBIT FOOD (*Rabbit-keeper*).—You may now sow Parsley, Swede Turnips, Chicory, and Lettuce; but the first and third would, perhaps, be the best for the position under trees. Swedish Turnips are, however, most useful.

BIGNONIA RADICANS FLOWERING (*A Subscriber*).—The seedlings will not, perhaps, flower until the third season, or even the fourth; but when once they flower they may be expected to do so annually—at least old plants do so as freely as other climbers.

REPOTTING CAMELLIAS (*The Master's Gardener*).—The best time to re-

pot Camellias is in spring, just when they are beginning to make new growths. They should be placed in heat, so as to secure a good growth, and the temperature you name will be suitable, continuing them there until the growths are complete, then keep cool and expose more fully to light. Whilst growing they should have a slight shade from bright sun, and a moist atmosphere must be secured to them. Admit air moderately. The soil you name will answer very well. The Palms you have treated aright, but could you not give them an increase of heat, so as to enable them the sooner to recover from the check consequent on the journey? That recommended for Camellias will answer well.

COMPOST FOR MANDEVILLA STAVBOLENS AND KENNEDYAS (*T. J. H.*).—For the first, two parts turfy loam and one part sandy peat, or leaf mould, with a free admixture of sand. The plants should be potted into larger pots as often as those they are in become filled with roots, keeping them well supplied with water through the summer, and training near the glass; but in winter keep drier, but not so much so as to cause the foliage and shoots to flag or shrivel. The Kennedyas should have a compost of two parts sandy peat, and one part light fibrous loam, with a free admixture of silver sand. They should have a good supply of air, and be trained near the glass.

RHODODENDRONS AFTER FLOWERING (*E. G. E.*).—The plants we apprehend are in pots, and in a greenhouse. In that case they should be well supplied with water, and be top-dressed with old cow dung, continuing them in a light, airy position until the growth is completed, then harden well off, and remove out of doors to a slightly shaded situation, but only from the sun between 10 A.M. and 3 P.M., plunging the pots to the rim in cold ashes, and keeping the plants well supplied with water. The seed vessels should be removed as soon as the flowers fall. Return the plants in-doors in October.

WINDOW PLANTS (*S. L.*).—No one not resident in your neighbourhood, and uninformed as to the plants you would require, could answer your query. Ask one or two of the nurserymen nearest to you for how much they would contract to supply you with a succession of plants.

AURICULA SEEDLING (*J. F. Falkirk*).—You committed a very common error—viz., sending blooms in cotton wool, for it absorbs every particle of moisture, and consequently the flowers arrive shrivelled up; but as far as can be made out, No. 331, green edge, is a promising flower of good characteristics.

MELONS, CUCUMBERS, HOTBEDS (*H. P.*).—If you will purchase the fourteenth volume of this Journal, you will find in it full directions on all the subjects you name.

NEW GARDENS (*A Country Cousin*).—We totally differ from you; and, moreover, we know the extra labour at present involved in making alterations for an entrance from the new railway station.

VINES INJURED BY FLEA BURSTING (*In a Fix*).—The Vines will be severely injured, but we do not think their fruiting next year will be prevented. We should maintain a moist atmosphere and brisk heat, so as to encourage new growth, taking a fresh shoot from the base of each shoot, and train these shoots in place of those destroyed, cutting away the scorched shoots when the fresh ones are a few inches long.

CLIMBERS FOR ARCHES (*Sunny*).—No plant grows so fast as the Virginian Creeper, and it is very hardy. It should have rich soil with which manure and leaf mould has been liberally mixed, and the ground should be trenched or deeply dug. If you wish for something evergreen nothing would serve you so well as Ivy, the Irish, both green and variegated, and Reagon's Ivy, would soon cover an arch, and would have a fine effect. Fast-growing climbers for arches and trellises are:—Caprifolium perlymenum and its varieties, Dutch Evergreen, Early Cream; C. Douglasii, C. affinis, C. sempervirens Brownii, and floribundum; C. Shepherdii; Aristolochia sipho; Clematis vitalba, C. viticella flore-pleno, C. viticella major, C. florida, C. montana major, C. flammula, and Jasminum nudiflorum. Ayrshire Roses—Alice Gray, Dundee Rambler, Myrrh-scented, Queen of the Belgians, Raga, and Thoresbyana; Bourasault—Amadis, Blush, Elegance, Gracilis, Infernis; Evergreen—Rampant, Myrianthes, Donna Maria, Carnea grandiflora, and Princess Louise.

SELECT COLEUSES (*R. Boswell*).—Without knowing whether they are to be grown in pots or planted out it is impossible to give a satisfactory answer. Presuming the former to be your intention, Queen Victoria, Albert Victor, and Princess Beatrice would probably suit you, but all the new golden kinds raised at Chiswick are very beautiful, and selection from these is a matter of taste. Of other kinds you may have C. Bausei, C. Saundersii, and C. Scottii.

SQUARE YARD (*Ignoramus*).—When a square yard is mentioned, we conclude that it is a space containing 9 square feet.

NAMES OF PLANTS (*J. A.*).—3, Tropaeolum azureum. (*Georgiana Nunn*).—Callistemon speciosus, sometimes known as Metrosideros speciosus, a native of Western Australia. It requires greenhouse treatment, and a compost of fibry peat and silver sand. (*C. R.*).—Cherophyllum sylvestre. (*S. C.*).—Doodia caudata. (*J. B.*).—1, Amelanchier canadensis; 2, Cerasus, species quite uncertain, the specimen not in flower. (*J. S. E.*).—1 and 2, Varieties of Lastrea dilatata; 3, Asplenium auritum. (*Emma*).—1, Asplenium falcidum; 2, Selaginella, probably Kraussiana, usually known as S. hortensis; 3, Selaginella Martensii.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 11th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 5	29.876	29.579	59	39	51	49	E.	.02	Cloudy, cold wind; fine, but overcast; densely overcast.
Thurs. 6	29.250	29.082	63	59	53	49	S.E.	.06	Densely overcast; showery; clear and fine at night.
Fri... 7	29.228	29.112	66	42	54	50	S.W.	.02	Overcast; cloudy; very fine and clear at night.
Sat... 8	29.536	29.269	53	42	54	50	S.	.06	Slight rain; showery; overcast, slight rain.
Sun... 9	29.339	29.583	60	51	53	50	E.	.23	Overcast; foggy and overcast; heavy showers.
Mon... 10	29.528	29.431	68	47	55	51	S.	.00	Showery; cloudy; clear and fine at night.
Tues.. 11	29.886	29.628	61	57	55	51	N.	.00	Densely overcast; cloudy but fine; densely overcast.
Mean	29.562	29.383	62.14	44.00	53.57	50.00	...	0.44	

POULTRY, BEE, AND PIGEON CHRONICLE.

EGG PRODUCE.

THE few lines I sent you last month seem to have interested some of your readers. I venture, therefore, to trouble you with a similar statement for April, premising that any statement of this kind, if strictly accurate, may have an interest whether or not it be "something uncommon."

My thirty hens have laid in April 492 eggs; three of them, however, were set before the 10th of the month.

My last communication was courteously noticed by "J. P." I agree with him that these statements are more interesting when the eggs laid by each variety can be given separately. I have to thank him also for his information about white peas as good food for laying hens. I shall be glad to know what he considers the best food for young chickens not usually intended for exhibition.—C. B.

"A. WYNNE" calculates he beats "C. B., Warrington." On the same principle of calculation I can beat "A. WYNNE." I possessed in January last two Crève-Cœurs; they began to lay on the 19th, and that month laid 14 eggs; in February, 42 eggs; in March, 46 eggs; to April 19th (the day I sent them away), 28 eggs, or in ninety-seven days 130 eggs. Multiply my February produce by four, and eight hens would beat his twenty-four by eight eggs.—H. P. LEECH, *Woolpit, Suffolk*.

EPWORTH POULTRY SHOW.

THE fourth exhibition of the Epworth Society was held on the 7th inst. From a very small beginning, the advance of this Show has been very satisfactory, and the efforts of the Committee will, doubtless, be rewarded by greater successes in future years. The day was moderately fine, broken, however, by occasional showers; but a good tent having been provided, neither visitors nor poultry suffered to any great extent, and the efforts of the Honorary Secretary, Mr. Hudson, to secure the comfort of all concerned, were attended with the most complete success.

In *Spanish*, Messrs. Newbitt's first-prize birds were perfect, and the *Dorkings* were generally good, the first-prize birds being unusually large and well-formed. *Gans* in the class for Any variety were mostly good, and the first-prize *Cochins* were well worthy of their position. Of *Brahma Pootras*, the winning pens were very good, notably the pencilling of the hen in the first-prize pen, which was of that rare and delicate character which is seldom seen. The winning *Hamburghs* were of high character, but the rest were poor. Among *Game Bantams* the competition was keen, and though an extra prize was awarded, many a good pen had to be left unnoticed. In the class for *Bantams* of Any other variety, Messrs. Ashton's Blacks were first, and Mr. Harrison's *Schrights* second. Among other distinct breeds, there were excellent *Polands*, *Houdans*, and *Crève-Cœurs*.

The single *Game cocks* were a show in themselves. The first-prize Black-breasted Red would have satisfied the most fastidious. He was firm, hard, and close-feathered; faultless in style, and dauntless in carriage, and there was little wonder that he proved the centre of attraction. It could not be said that he was in bad company, for the second and third-prize birds were of high character. Cocks of "any other variety" were poor.

The single *hens* were the most difficult class to judge; not, however, in selecting good birds, but in deciding between the claims of the various breeds exhibited, and several extra prizes were awarded.

Of *Pigeons*, the *Carriers* were but moderate, and the *Pouters* very poor. The *Fantails* and *Turbits* were very good. A most beautiful pair of Black Mottles won in the *Tumbler* class. The *Trumpeters* were also very fine. *Owls* were an entire failure. The best pair of *Barbs* was in a filthy condition, otherwise they would have exchanged places with the first-prize pen. In the "Variety" class an excellent pair of Red Magpies was first, and Blacks second, none of the others being of more than ordinary merit.

The show of *cage birds* was not of high character, the only noteworthy birds being the first-prize *Linnets*, *Lizards*, and the Grass Parakeet in the "Variety class."

SPANISH.—1 and 2, T. C. & E. Newbitt, Epworth.

DORKINGS.—1, C. Chaloner, Workson. 2, T. C. & E. Newbitt. *hc*, J. F. Loversidge, Newark; D. White, Driffield. *c*, W. Dixon, High Mellowood.

GAME (Any variety).—1, C. Chaloner. 2, Sales & Bentley, Crowle. *hc*, Master G. Cocking, Crowle.

COCHINS (any colour).—1, T. C. & E. Newbitt. 2, Mrs. Cross, Appleby Viarsage, Brigg (Buff). *c*, Miss A. E. Addey, Askern (White); E. S. Smith, Boston.

BRADRA POOTRA.—1, C. Chaloner. 2, T. C. & E. Newbitt. *hc*, W. Whiteley, Sheffield. *c*, T. Dawson, Epworth.

HAMBURGHS (Gold or Silver-spangled).—1 and *hc*, T. C. & E. Newbitt.

2, S. & R. Ashton, Mottam (Gold-spangled). *c*, J. F. Loversidge, Newark; J. Murgatroyd, Idle.

HAMBURGHS (Gold or Silver-pencilled).—1, T. C. & E. Newbitt. 2, G. Holmes, Great Driffield.

GAME BANTAMS (Any variety).—1, L. Biney (Manchester (Black Red). 2, W. Greaves, Bradford. 3, J. R. Robinson, Sunderland. *hc*, L. Biney (Duckwing); Moody & Habishaw, Otley; J. Mowbray, Funningley. *c*, T. Eggleston, Halifax; G. Holmes, Great Driffield.

BANTAMS (Any other variety).—1, S. & R. Ashton (Black). 2, T. C. Harrison, Hull. *hc*, T. C. Harrison; W. Brotherton, Idle; G. Holmes.

ANY OTHER NEW OR DISTINCT BREED.—1, T. C. & E. Newbitt. 2, L. Biney (Houdans). 3, C. H. Smith, Ratcliffe-on-Trent (Crève-Cœur). *hc*, R. Tomkinson, jun., Balby (Guinea Fowls); J. Staley, Collingham (Padua Chamois). *c*, Mrs. Cross (Houdans); E. Baxter, Idle (Black Hamburghs).

CROSSBRED FOWLS.—1, H. Merkin, Driffield. 2, W. Hall, Mellowood. *hc*, W. Charter, Driffield.

GAME (Any variety).—*Cock*.—1 and 2, C. Chaloner. 3 and *c*, Sales and Bentley, Crowle.

ANY VARIETY.—*Cock*.—1, S. & R. Ashton. 2, T. C. & E. Newbitt. *hc*, W. O. Quibell. *Hen*.—1, J. Thresh, Bradford. 2, Moody & Habishaw. 3, W. Bearpark, Aladerey Steeple. 4, D. White. *hc*, W. Bearpark; Sales & Bentley; T. C. & E. Newbitt; C. Chaloner. *c*, S. & R. Ashton (Golden-spangled Hamburgh); Mrs. Cross.

DUCKS (Any pure breed).—1, T. C. Harrison. 2, S. & R. Ashton (Carolin). 3, Mrs. Charlton, Belton (Aylesbury). *hc*, J. Clarke, Sandtoft (Muscovy).

CROSSBRED.—2, G. Oldfield, Epworth. Extra 2, Z. G. Maw, Newland.

PIGEONS.

CARRIERS.—1, H. Yardley, Birmingham. 2, R. Fleming, Hull.

POWTERS.—1, H. Yardley. 2, T. Thompson.

TUMBLERS (Any variety).—1, J. Hawley. 2, T. C. & E. Newbitt. *hc*, J. Hawley; H. Yardley.

JACOBS.—1, J. Hawley. 2, T. C. & E. Newbitt.

FANTAILS.—1, J. Hawley. 2, T. C. & E. Newbitt. *hc*, J. T. Lishman, Bradford; T. C. & E. Newbitt.

TURBITS.—1, H. Burnip, Epworth. 2, T. C. & E. Newbitt. *hc*, H. Yardley.

TRUMPETERS.—1 and *hc*, J. Hawley. 2, J. Firth, jun., Dewsbury.

OWLS.—2, J. Hawley.

BARBS.—1, J. Hawley. 2, J. Firth, jun. *hc*, H. Yardley. *c*, T. Thompson.

ANY OTHER VARIETY.—1, J. T. Lishman. 2, T. C. & E. Newbitt. *hc*, A. A. Vander Mersch, Forest Hill, London (Nans and Isabells). *c*, H. Yardley.

SELLING CLASS.—1, H. Burnip. 2, J. T. Lishman. *hc*, T. C. & E. Newbitt; C. Grail, Thorne.

SELLING CLASS.—1, Moody & Habishaw. 2, H. Burnip.

CAGE BIRDS.

CANARY (Yellow).—1, T. Gunnee, Thorne. 2, W. Green, Thorne. *hc*, T. Maynard. *c*, — Salisbury, Epworth; — Mugglestone, Epworth; Miss F. Rusling.

CANARY (Buff).—1, D. Daubney, Willoughton. 2, E. A. Isle, Epworth. *c*, T. Maynard.

CANARY (Green or Variegated).—1, T. C. & E. Newbitt. 2 and *hc*, T. Maynard (Pied and Crested Norwich).

GOLDFINCH.—1, C. Grail, jun. 2, J. Boyes. *hc*, — Mugglestone; G. Fawcett, jun., Epworth.

LINNET.—1, F. Clark, jun. 2, W. & H. H. Maw. *hc*, A. Maw.

ANY OTHER VARIETY.—1, Mrs. E. Hudson (Warbling Grass Parakeet). 2, T. W. Dawson (Goldfinch Mule). *hc*, Miss M. Read (Parrot); P. Storey, Epworth (Goldfinch Mule). *c*, Miss A. Hudson (Weaver).

Mr. E. Hutton, of Pudsey, Leeds, was Judge.

ADVICE TO PIGEON SELLERS.

NEVER send birds on approval unless you know the party wishing to see them. It often causes such inconvenience as in the case of Mr. Halford, Levenholme, Lancashire, who has gone away, and his address is not known, so that Mr. Deakin does not know where to apply for payment for some valuable Pigeons sent to him.

RABBITS AT EXHIBITIONS AND IN THEIR HUTCHES.

I HAVE often thought that the Rabbit section of our shows seems to have been very little noticed in any report, as if they, as a great favour, had been allowed to be exhibited and had not paid for their admission. Now, as they both pay to be admitted and have prizes awarded to them like other sections of the show, be it on a great or small scale, I do think more notice should be taken of them; and I think the Judge, or some fully competent person, ought to prepare a report of the various points of excellence of each prize-winner, with the name and address of its owner, which, by the way, is seldom stated, and when wanted the secretary has to be applied to for it. Poultry and Pigeons are fully described in detail, and it is very proper that their various points should be commented upon; and why not those of Rabbits? I think each section of a show finds its ardent admirers, and so each section should furnish a worthy report; then the pet of each fancier will be honestly treated, and I am sure it would be a great advantage to all shows, and much more satisfactory to exhibitors generally.

Rabbits in their hutches have been mentioned during the last few weeks as to feeding. I have kept Rabbits for about

twenty years, and think that, say three or four days out of the seven, they ought to have water to drink—not much at a time; say half a teaspoonful for the largest varieties, as Patagonians, Lop-eared, and Belgian Hare Rabbits, and a little less for the smaller varieties. Every alternate morning, or nearly so, I give peas soaked for twelve hours in fresh water, and a little of the water with them, and I find generally they drink the water first, especially in hot weather. Last year many valuable Rabbits died, for the summer was dry, and there was, therefore, very little moisture even in the green food; and I know a gentleman who gave no water, and lost most of his valuable prize Rabbits in consequence. It seems cruel in the extreme to deprive them of water, when we all know that in a natural state they feed at night when all vegetation is saturated with dew, and the food generally is of a moist nature, and not dry oats, hay, and straw as when in hutches.

Porridge twice a week of Indian meal, or of that and common oatmeal mixed, is good for them, and more moist than bran and oats daily. Potatoes boiled with a handful of meal, and rape cake flour mixed at times, help to fatten. Malt dust and bran mixed and given dry they also like. A variety of food no doubt is of great importance.

I have not named the varieties of green food given generally, as all know what Rabbits like. I give chicory every other day when in season. I grow it for the purpose, and they like it.

As to breeding, I never have more than four litters during a year, and if wanted "extra strong" only three. I leave the young ones always eight or ten weeks with the doe, being sure that she is supplied with the best of food, and in abundance. A breakfast of milk and bread, or the two as a beginning, is very good for her; then carrots, &c., and crushed oats.

As to does eating their young ones, that will at times happen, though they are supplied with water or milk, which should always be about the time the litters are expected, nest made, &c. A sudden fright, as from a cat unexpectedly presenting itself, or a mouse running across the hutch, will induce this cannibalism.

The hutch should be mice-proof both as regards the woodwork and netting; perpendicular three-eighths strong galvanised netting is the best and cheapest in the end. To have the hutch clean and well ventilated before the litters come is of great importance; and after being swept out, if not well ventilated, a little disinfecting powder should be sprinkled about. The floor should be covered with fine ashes and sawdust mixed, before the straw (oat is the best) is put in, and a little hay can be given daily.

I think if the various fanciers would at times give a few hints respecting Rabbits generally in the pages of this Journal it would be of service to others. Why should not Rabbits at times peep out of their hutches and show to the world that they, like poultry, Pigeons, and bees, are worthy of being spoken about?—CHARLES RAYSON.

LARGE DUCK'S EGG.—One of my Aylesbury Ducks has laid such a large egg that I determined to weigh it. It weighed 6½ ozs. On breaking it I found it contained the ordinary amount of white, two yolks, and another perfect egg. This also I broke, and found that it contained a fair-sized yolk and a good deal of white.—R. S. S. W.

BEES NEAR MANCHESTER AND AT CARLUKE, LANARKSHIRE.

The following note describes what the bees are doing at Carluke. I have had no swarms this season. Five or six of my hives are ready, but the weather is so cold that I think they are better unswarmed. Mr. Young, of Denton, in this neighbourhood, had a natural swarm on the 23rd of April.—A. PETTIGREW, *Rusholme, near Manchester.*

"The bees are thriving very well here (Carluke), as well as with you. A great many hives appear to be ready for swarming. My brother has eked five of his; they were lying out very much, but he thought it too early to take swarms off them. I saw him last night. He told me that he had looked at some of those which he had eked, and that they had their combs down to the board again. There is a man here of the name of Neilson, who has some hives standing down at Mr. Stewart's, of Brownlee; he drew off two swarms on Saturday last (May 1st).

The old stocks weighed 39 lbs. and 40 lbs. respectively after the swarms were taken from them. These are the only swarms I have heard of in this quarter. The thatchers are not off yet. He was looking at them yesterday, but could see no queens set, so did not take them off. They have been lying out for a long time, and are very full of bees, but the weather has taken a great change. It was exceedingly hot, but is now extremely cold—everything parched and dried. A good fall of rain would be very acceptable. Moisture is much needed."—R. R."

CAPTURE OF A BEES' NEST IN TIMOR.

THE following extract from Mr. Wallace's "Malay Archipelago" recently published, fully describes the plundering of a bees' nest in Timor, at which the author was present, as stated by Mr. Woodbury in page 301 of our present volume. After remarking that "Almost the only exports of Timor are sandal wood and bees' wax" Mr. Wallace says:—

"The bees' wax is a still more important and valuable product formed by the wild bees (*Apis dorsata*), which build huge honeycombs suspended in the open air from the under side of the lofty branches of the highest trees. These are of a semicircular form, and often 3 or 4 feet in diameter. I once saw the natives take a bees' nest, and a very interesting sight it was. In the valley where I used to collect insects, I one day saw three or four Timorese men and boys under a high tree, and, looking up, saw on a very lofty horizontal branch three large bees' combs. The tree was straight and smooth-barked, and without a branch, till at 70 or 80 feet from the ground it gave out the limb which the bees had chosen for their home. As the men were evidently looking after the bees, I waited to watch their operations. One of them first produced a long piece of wood, apparently the stem of a small tree or creeper, which he had brought with him, and began splitting it through in several directions, which showed that it was very tough and stringy. He then wrapped it in palm leaves, which were secured by twisting a slender creeper round them. He then fastened his cloth tightly round his loins, and producing another cloth wrapped it round his head, neck, and body, and tied it firmly round his neck, leaving his face, arms, and legs completely bare. Slung to his girdle he carried a long thin coil of cord; and while he had been making these preparations one of his companions had cut a strong creeper or bush rope 8 or 10 yards long, to one end of which the wood torch was fastened, and lighted at the bottom, emitting a steady stream of smoke. Just above the torch a chopping knife was fastened by a short cord.

"The bee-hunter now took hold of the bush rope just above the torch, and passed the other end round the trunk of the tree, holding one end in each hand. Jerking it up the tree a little above his head he set his feet against the trunk, and leaning back began walking up it; it was wonderful to see the skill with which he took advantage of the slightest irregularities of the bark or obliquity of the stem to aid his ascent, jerking the stiff creeper a few feet higher when he had found a firm hold for his bare feet. It almost made me giddy to look at him as he rapidly got up—thirty, forty, fifty above the ground; and I kept wondering how he could possibly mount the next few feet of straight smooth trunk. Still, however, he kept on with as much coolness and apparent certainty as if he were going up a ladder, till he got within 10 or 15 feet of the bees. Then he stopped a moment and took care to swing the torch (which hung just at his feet), a little towards these dangerous insects, so as to send up the stream of smoke between him and them. Still going on, in a minute more he brought himself under the limb, and in a manner quite unintelligible to me, seeing that both hands were occupied in supporting himself by the creeper, managed to get upon it.

"By this time the bees began to be alarmed, and formed a dense buzzing swarm just over him, but he brought the torch up closer to him, and coolly brushed away those that settled on his arms or legs. Then stretching himself along the limb, he crept towards the nearest comb and swung the torch just under it. The moment the smoke touched it, its colour changed in a most curious manner from black to white, the myriads of bees that had covered it flying off and forming a dense cloud above and around. The man then lay at full length along the limb, and brushed off the remaining bees with his hand, and then drawing his knife cut off the comb at one slice close to the tree, and attaching the thin cord to it let it down to his companions below. He was all this time enveloped in a crowd of angry

bees, and how he bore their stings so coolly, and went on with his work at that giddy height so deliberately, was more than I could understand. The bees were evidently not stupefied by the smoke or driven away far by it, and it was impossible that the small stream from the torch could protect his whole body when at work. There were three other combs on the same tree, and all these were successively taken, and furnished the whole party with a luscious feast of honey and young bees, as well as a valuable lot of wax.

"After two of the combs had been let down, the bees became rather numerous below, flying about wildly and stinging viciously. Several got about me, and I was soon stung, and had to run away, beating them off with my net and capturing them for specimens. Several of them followed me for at least half a mile, getting into my hair and persecuting me most pertinaciously, so that I was more astonished than ever at the immunity of the natives. I am inclined to think that slow and deliberate motion, and no attempt at escape, are perhaps the best safeguards. A bee sitting on a passive native probably behaves as it would on a tree or other inanimate substance, which it does not attempt to sting. Still they must often suffer, but they are used to the pain and learn to bear it impassively, as without doing so no man could be a bee-hunter."

EARLY SWARMING OF BEES.—In this neighbourhood, Newbridge Hill, near Bath, on the 27th of April, two fine swarms came off; one from Mr. Lovell's in the forenoon, and one from the Rev. H. H. Mogg's. Has anyone had any earlier than this?

OUR LETTER BOX.

POULTRY NOT FEEDING AND DYING (R. H. G.).—Your poultry must pick up something that is injurious to them, and probably poisonous. Do they have access to any refuse that contains metallic poison? Are the majority of your birds healthy? If there is no sign of poison in their faeces, then the only treatment is to purge them thoroughly, and to feed on meal slaked with warm water. We advise you to use Bailey's pills, and to administer pills of camphor, two at a time, the size of garden peas and to continue them till the birds seem recovering.

CRÈVE-CŒURS—EGGS IN WINTER (Randolph).—We have many times explained, that to insure eggs in the winter you must keep pullets of the previous spring; but there are breeds that affect different seasons for laying. Our experience of the Crève-Cœurs is that they lay later in the year than any other breed, but they do not begin so early. Thus they will keep on laying till November, while all others are useless, but they do not lay much between that time and March. They are a valuable breed.

SPANISH HENS (E. G. M.).—All the symptoms show that both the hens had long been egg-bound, arising in all probability from their being too fat, and shell-less eggs had evidently burst in the inflamed egg-passage and formed the masses you describe. Nothing could then have been done that would have saved their lives. Less fattening food, more exercise, and more green food, especially lettuce leaves, would prevent such disasters.

CHICKENS NEWLY HATCHED (A Constant Reader).—They will do best on the bare ground, which should be covered about an inch deep with dry sand.

GLAZING ROOF OF POULTRY RUN (Seghill).—We should use rough plate glass.

BLADHEAD AND BEARD PIGEONS (W. W.).—We cannot undertake to be treasurers. It occupies more time than we can spare.

LOST PIGEON (F. D. G.).—If you can prove that the Pigeon was delivered at the railway office, and that it was lost before the basket passed out of the custody of the Company, we think you might recover from them the value; but you should consult a solicitor, who can inquire into particulars of which we have no knowledge.

REARING GROUSE AND GOLDEN PHEASANTS (Subscriber and Constant Reader).—Grouse are very easy birds to rear, much more so than Pheasants. Choose a small hen, and she will hatch them. Their food should be egg boiled hard and chopped fine, bread and milk, cooked meat chopped fine, dough made of oatmeal slaked with milk, and oats crushed up fine. As soon as they are old enough they should be supplied with young heather, so fastened that it will bear the pull necessary to eat the tender shoot at the end. They do not require much space, and are very hardy. They are dainty in water, requiring it fresh, and they should be supplied with plenty of road grit, or dry mountain sand. The young of Golden Pheasants should be reared like common Pheasants as regards food. They require to be in confinement rather longer, and it is desirable, if it can be conveniently done, that they should not have liberty till about the tenth day; nevertheless, they should have as much space as can be fenced in; not less than 4 yards square.

CANARIES AND REDBREASTS (Idem).—A Canary will not rear Robins; few birds will. They can be easily reared by hand; feed with chopped bullock's heart and bread. We have reared many.

CANARY LAYING SOFT EGGS (Subscriber).—"The cause of your hen laying soft eggs is her not secreting enough of shell-producing material. The fact of her laying both soft and hard eggs does not at all militate against this theory. Give her a liberal supply of old time rubbish broken small. You will find she will eat it freely, lully conscious of the important part it is destined to perform. The gravel you have supplied is useless for shell-producing purposes, but will assist digestion by attrition in the gizzard."—W. A. BLAKESTON."

REARING YOUNG FINCHES (Subscriber).—"The best food for young finches, Linnets, &c., when taken from the nest, is bread sopped in milk, with a little scalded rape seed as they become older. I am not well up in all the mysteries of 'Club Row' and other haunts of the wild bird fancy, but I have the above from a man who would at any time rather stand a week at a hedge-back, on the look-out for Linnets, than do a day's work. Little and often is the rule for feeding nestlings. The puffy appearance referred to is caused by the digestive organs being disarranged by over-feeding on rich nutritious diet. Young birds are very apt to gorge themselves if they have the opportunity; hence the importance of putting them on hard food as soon as possible. Should a young bird sit 'thick,' blow the feathers from the breast, and if the bone appear sharp and prominent, and the flesh be wasting away, rely on it the stomach is out of order. Give a drop of castor oil, or feed on bread and milk, with a little coarse brown sugar. I do not know any work on the rearing and management of small birds, but such there is sure to be. At school, in my bird-feeding days, I used to swear by the 'Boys' Own Book,' extracts from which I fancy I have recognised in more pretentious works."—W. A. BLAKESTON."

CANARIES COUGHING (A. E. S.).—"I can only prescribe warmth, with sopped bread and milk, or try a few drops of sherry or rum in the water."—W. A. BLAKESTON."

YOUNG GOLDFINCHES (A Long Subscriber).—When it is desired to raise Goldfinches by hand, they should be taken from the nest when about half-fledged. The older, however, the better always, provided they are not too old to open their mouths to be fed, and they may be reared on a paste of sopped bread and maw seed (poppy seed). Some persons use rape seed, but if that is used it should previously be scalded and well washed to deprive it of its pungency; but maw seed is much the better. They require feeding often, and the food should never be given them if at all sour. Some people, to avoid the trouble of feeding by hand, place the nest containing the young birds in a cage, hang it on the tree where found, and leave the old birds to feed their young through the bars of the cage. This plan often succeeds, the young birds being at the same time provided with seed and water for them to peck at if inclined, that they may learn to feed before the old ones forsake them, which, if it is an early brood, the old ones are apt to do in order to breed again. These young ones though they have never flown at liberty, yet are more shy than nestlings reared by hand, but are tamer than the Grey-pate brachiers caught after they can feed themselves. You should buy Brent's "Song Birds." You can have it from our office by post if you enclose twenty postage stamps with your address.

BOOKS (H. N.).—Brent's "Canary and British Finches." You can have it free by post from our office, if you enclose nineteen postage stamps with your address. (T. W. A.).—Payne's "Bee-keeping for the Many." You can have it free by post from our office if you enclose five postage stamps with your address.

BEE BOOK (Duckwing).—Mr. Woodbury pleads "guilty," and adds that he has not yet written a bee book, and fears it may be a long time before he do so. It is true he has made a beginning, but other things constantly intervene, and what with corresponding with "our Journal," &c., he has about as much bee-writing as he can well contend with. With regard to the points referred to, he states that an artificially-raised queen is usually fertilised when about twelve days old, and commences egg-laying two days afterwards. The sign of fertilisation is only to be perceived on the return of a young queen from a successful wedding-flight, or within a few hours afterwards, during which time it causes her to present an appearance similar to that of a worker which has lost its sting. Mr. Woodbury recommends you to stock your frame hive at once by transferring to it the bees and combs from a common hive, in the manner described in page 319 of the twelfth volume of "our Journal."

BEE-HOUSES AND HIVES (W. Armstrong).—The best kind of bee-house is in our opinion an ordinary verandah or similar erection of sufficient depth to shelter the hives and leave room for operating in their rear. It should be closed at each end, but be either entirely open in front, or covered only with pheasant wire, in which must be made a good-sized semi-circular opening in front of each hive, which openings are best kept as far asunder as possible. Frame hives such as are used by Mr. Woodbury are decidedly the best, both for pleasure and profit, if you can attain to the necessary degree of facility in manipulating them; if not, we should recommend the Stewarton hive, or Payne's improved cottage hive, made somewhat larger than described in "Bee-keeping for the Many," say 16 inches in diameter, by 8 or 9 inches deep. If you can manage frame hives, you may at once transfer some or all of your stocks now in common hives into the former, in the manner described in page 319 of our twelfth volume.

TEMPERATURE OF A HIVE—ARTIFICIAL SWARMING (A Subscriber).—We believe that a mean interior temperature of about 80° is the best whilst bees are active and breeding is going on. In winter we consider that the better they are protected, and the higher the temperature can be kept, provided always it be equable, the more prosperous are bees likely to become. In forming an artificial swarm by transferring a brood-comb and changing places with the hives, it is essential that the queen be taken with the abstracted comb, since if she were left behind the bees of the swarm thus formed would build none but drone combs until they had hatched out a young queen. The parent hive will in this case raise a queen for itself.

POULTRY MARKET.—MAY 12.

Our supply is slowly increasing, and trade is slightly improved. There is, nevertheless, great dullness in the market.

	s.	d.	s.	d.		s.	d.	s.	d.	
Large Fowls.....	4	6	to	5	0	Partridges	0	0	to 0	0
Smaller do.....	3	6	4			Grouse.....	0	0	0	0
Chickens	2	0	2	6		Hares.....	0	0	0	0
Goatskins.....	6	0	7	0		Rabbits.....	1	5	1	6
Ducklings.....	3	0	3	6		Wild do.....	0	8	0	9
Guinea Fowls.....	3	0	3	6		Pigeons.....	0	8	0	9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 20—26, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
20	Th	Royal Botanic Society's Show closes.	67.0	43.6	55.3	20	4	4	49	47	5	57	2	5	9	3	43
21	F		67.2	44.7	56.0	19	3	4	51	7	59	42	25	2	10	3	39
22	S	Royal Horticultural Society, Special Prize	65.4	42.3	53.8	18	1	4	52	7	50	3	50	2	11	3	35
23	SUN	TRINITY SUNDAY, [and Pelargonium Show.	68.4	43.8	56.1	14	0	4	53	7	21	5	16	3	12	3	31
24	M	Anniversary Meeting of Linnæan Society.	67.5	42.9	55.2	11	59	8	55	7	27	6	44	3	13	3	26
25	Tu		66.3	43.0	54.7	16	58	3	57	7	43	7	14	4	15	3	20
26	W	Meeting of Society of Arts.	67.4	43.0	55.2	19	57	3	58	7	53	8	50	4	15	3	11

From observations taken near London during the last forty-two years, the average day temperature of the week is 67.0°; and its night temperature 43.3°. The greatest heat was 89°, on the 22nd, 1847; and the lowest cold 26°, on the 23rd, 1863, and 1864; and 25th, 1861. The greatest fall of rain was 0.76 inch.

BEDDING TULIPS.



SEND you a few hints and experiences which may possibly interest some of your readers. I have now for several years taken great delight in bedding Tulips, and by careful study of their habits and arrangement of colours I have been enabled each year to have my garden beautifully gay and bright in spring, when colouring is so highly prized.

I cannot understand why early Tulips are not more generally grown. Some people fancy there is no variety in Tulip colour; there cannot be a greater mistake; I know no class of flowers with more variety. There is no blue Tulip certainly, neither is there a black one, but I think we have every shade of colour besides. Many people, too, think the Tulip such a short-lived flower. On the contrary, each bloom on an average will be found to last in perfection for three weeks, and you have colour in each flower for at least a month, and colour sometimes of the most beautiful and gradually-developing character. Take *Proserpine*, for instance, it begins to develop itself very early with all the beauty of a Rose bud, and it increases gradually until it culminates in a cup-shaped bloom of a most distinct and brilliant hue. It is to me most interesting to watch the development both of colour and form in a Tulip, and this you may do from the end of March, during the whole of April, and well on into May. Surely this, for one class of flowers, is by no means a limited period!

Again, some people have a notion that Tulips give much trouble. No such thing; all they want is order and method. Thus, suppose you have procured a collection of bulbs in the summer—any good nurserymen will furnish them—well, plant them on Lord Mayor's-day (anyone may remember that is November 9th), and if when you plant them you use plenty of silver sand, you may scatter to the winds all the nostrums about composts. In planting, take a flat or rounded, not pointed, dibble, with inches marked upon it, and then with sand below and sand above, put in the bulbs from 2 to 3 inches deep, according to their size. Cover them in with well-powdered earth, and do nothing more until they begin to peep above the ground; then stir up the ground frequently with a small fork, in order that the rain and moisture may flow evenly between the bulbs. This is very necessary, as is also careful weeding, but nothing else is required. You have now, in short, nothing else to do but to watch and admire them until they have flowered. As soon as the petals have fallen, snap off the seed vessels, so that the sap may go down and strengthen the new bulb; for all this time a bulb or bulbs have been forming round the old ones. You need do nothing more till you want to put in the summer-bedding plants—say about the end of May. Then, on a fine dry day, take up the bulbs gently with a fork; if they have been well sanded you will have no trouble at all. Tie them together in bundles of sorts by the stalks, and place them in dry shade; leave them until they are thoroughly dried, and until you can easily pull-out the stalks and separate the

young bulbs. This will be about June 18th—remember that. Then put them away labelled in boxes and drawers, looking over them occasionally to see that they are safe, and they will be ready for you in vastly increased numbers by Lord Mayor's-day again.

This is all you have to do in growing Tulips. No bulbs increase so rapidly—an old bulb of *Lac van Rhyn*, for instance, will often produce six—none require so little attention; none are so hardy or so thoroughly independent of weather.

This has been a somewhat exceptional season, but my Tulips have come up most of them to their very day notwithstanding. I would strongly advise anyone who loves spring flowers to try a few beds of Tulips. They have, moreover, the great advantage over many other spring flowers, that they do not in the least interfere with the bedding arrangements for summer. You may accommodate them also to beds of any shape, for they may be planted with admirable effect either in masses, or lines, or rings.

There are certain points which it is well to consider before you settle your plans—the date of the blooming, the height of the stalk, and size of the flower, and, above all, the colours. As one ounce of experience is said to be worth a pound of theory, I send you a list of some good varieties which I have grown myself, with all these particulars carefully noted down. Anyone from this list may without the smallest difficulty arrange several beautiful beds according to his own taste. I may observe that I call the Tulip out when at least three blooms (in quantities of not less than one dozen), are open, and over when at least three blooms have fallen. I should be glad if any of your correspondents would give their experience of Tulip-growing, more especially as regards the arrangement and colouring of the beds.

LIST OF BEDDING TULIPS.

Name.	Date of Blooming.		Height of Stalk.	Size of Flower.	Colours.
	Out.	Over.			
Yol. Duc Van Thol	Mar. 20	April 14	short	small	yellow
Red Duc Van Thol	" 30	" 18	"	"	red
Kanarie Voel	" 31	" 16	medium	medium	yellow
White Puttebakker	April 3	" 20	tall	large, cup-shaped	white
<i>Proserpine</i>	" 4	" 24	"	medium	rose
<i>La Flaisante</i>	" 5	" 20	"	medium	light purple
<i>Couronne d'or</i>	" 7	" 20	"	"	dark purple
<i>Vermillon Brillant</i>	" 7	" 20	"	"	scarlet
<i>Woonerman</i>	" 11	" 27	tall	very large cup	claret
<i>Bizzard Pronkert</i>	" 11	May 8	"	large	yellow, with orange stripe inside
<i>Archduc d'Autriche</i>	" 12	April 26	"	enormous cup	bronze red, with broad yel. mark.
<i>Duchesse de Parma</i>	" 13	" 27	"	large	bronze crim., bordered with buff orange
<i>Joost van Vondel</i>	" 13	" 29	medium	"	red with white stripes
<i>Thomas Moore</i>	" 13	May 6	tall	"	buff orange
<i>Standard Royal, or Silver Steward</i>	" 13	April 28	medium	medium	white and scarlet feathered
<i>La Remarquable</i>	" 13	May 2	tall	large pointed petals	chocolate, shaded with pink
<i>Cottage Maid (La Precieuse)</i>	" 13	April 30	medium	med. pointed petals	white, flushed with rose
<i>Rose gris de Lin</i>	" 13	" 28	"	medium, cup-shaped	do., lighter shade
<i>Pax Alba</i>	" 14	" 29	short	medium	pure white

Name.	Date of Bloom- ing.		Height of Stalk.	Size of Flower.	Colours.
	Ont.	Over.			
Cerise de France ..	April 14	April 29	short ..	medium	lemon, striped with cherry
Cardinal's Hat	" 14	May 4	tall	"	dark crimson with a light gold margin
Alba regalis	" 14	" 30	medium	"	white
Grootmeester	" 14	" 3	"	large	like Standard Royal
Fabula	" 15	" 5	"	very large ..	white-feathered with plum
Bride of Haarlem ..	" 16	" 1	short ..	medium	scarlet, flaked with white
Brutus rectif ^a	" 18	" 5	medium	"	red, striped with yellow
Lae Van Rhyn	" 21	" 6	short ..	small	lake, bordered with white
Due de Cardeise ..	" 24	" 8	"	"	red, bordered with sulphur white
Geener's (or the Father Tulip)	" 28	middle of May	very tall	large	brilliant scarlet with blue rim
DOUBLE TULIPS.					
Toumsoel	April 13	May 27	short ..	medium	red and yellow
Rex rubrorum	" 22	" 8	medium	"	red
Yellow Rose	" 24	middle of May	"	"	yellow
La Candeur	" 24	"	"	"	white
Marriage de ma Pille	" 28	"	very tall	very large ..	red and white
PECULIAR TULIPS.					
Florentine	April 10	May 22	tall and pendu- lous	sharp-point'd petals	yellow
Dragon or Parrot ..	" 27	now in full beauty	"	ragged	divers colours

—J. W. COBB, *Kidmore End, Henley-on-Thames.*

HEADING-DOWN NEWLY-PLANTED FRUIT TREES.

DOUBTLESS the experience of "ARCHAMBAUD" prompted the remarks by him in page 285 on this subject. If I understand him rightly, the question at issue is, Whether a newly-planted tree sustains a greater check if pruned at the time of planting, say the first week in November, than it does if not pruned till it has started into growth in the following spring?

Burke, in the introduction to his essay on "The Sublime and Beautiful," observes that "A theory founded on experiment, and not assumed, is always good for so much as it explains;" and I am led to infer that as "ARCHAMBAUD" will not admit my theory to be a good one, so I must have failed to explain its working sufficiently. That it is a good and safe plan I am so thoroughly convinced from considerable experience and observation, that I have no hesitation in strongly advocating its adoption with the greatest certainty of success. Of course, I take it for granted that all other requirements of a newly-planted tree will be afforded, such as a suitable, carefully prepared, and well-drained soil; mulching, staking, and watering when necessary in the following summer; for if a tree so pruned has its roots thrust into a hole barely large enough to admit them, the soil thrown in and trampled down, and no further notice taken of it, it would be hardly fair to expect success.

Other things being equal, then, I again assert that a stout young fruit tree, having a fair proportion of healthy roots may safely and advantageously be headed-down at the time of planting, no matter what kind it may be, or to what class it may belong; and this treatment answers equally well in the case of dwarfs, standards, or simple maidens.

It may, perhaps, not be unprofitable if I state here my treatment for the first year of the young standards which I mentioned at page 203 as being planted in place of certain old decayed trees. After pruning, mulching, and staking securely, nothing farther was required till spring, when, having some fresh night soil at my disposal, I determined to try the effects of a slight top-dressing to the roots of the young standards. Accordingly the mulching was removed, and about an inch of the night soil spread on the surface, a little dry earth scattered over it, and the loose mulching at once replaced. All the trees broke strongly and well, and as often as I considered necessary water was given to them from a pond close by. The result of this simple treatment was an abundance of firm, stout, healthy shoots clothed with leaves, of which the large size and deep hue bore ample testimony to the rude health and vigorous root action of the trees.

In regard to the action of the sap, I understand "ARCHAM-

BAUD" to infer that it is the action of the sap in spring which causes the buds to swell, whereas I have always understood that the swelling of the buds is the primary cause of the motion of the sap; and acting upon this principle I have pruned at the time of planting, so that the buds intended to form the future branches of the tree might be those which should attract and profit by the first flow of sap. At page 237 of Lindley's "Introduction to Botany," it is stated that "In the spring, as soon as vegetation commences, the extremities of the branches and the buds begin to swell. The instant this happens a certain quantity of sap is attracted out of the circumjacent tissue for the supply of these buds; the tissues which is thus emptied of its sap is filled instantly by that beneath or about it; this is in its turn replenished by the next; and thus the whole mass of fluid is set in motion, from the extremities of the branches down to the roots." And therefore, if this view of the matter be correct, does not that very waiting until the buds begin to push in spring before heading-down a tree, cause a greater waste of its vitality, and offer a much greater check to its vigour, than if its sap had at once been absorbed by those buds which contain the embryo branches, but which, under "ARCHAMBAUD'S" treatment have been kept dormant and inactive?—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

PROPAGATION OF VARIETIES BY SEED.

THE theory of the individuality of vegetable life residing in the bud, that a plant is a colony of individuals something in the style of a coral or polypus tree, is little noticed or cared about by practical horticulturists, although the formation of separate perfect plants by means of cuttings, eyes, grafts, and budding certainly affords daily proofs in favour of the truth of such a theory.

Setting aside all abstruse arguments on the absolute truth of such a theory, or whether that of each cell being the individual, is the truer, I would simply, taking the former in its bearings on cuttings, eyes, &c., call the attention of practical men to certain deductions, which if found correct, might probably alter present ideas as to the propagation of varieties by seed, and this is particularly interesting at present, when so much is being said of the wearing-out and gradual extinction of varieties of Pears as propagated by cuttings and grafting. May not this individuality of the bud extend to or continue in the blossom? and may not the great diversity among seedlings proceeding from a single and isolated plant—an Apple tree or a Pear tree for instance—be ascribed to individuality residing in each blossom? In other words, as like begets like, if all the blossoms on an isolated Apple tree were only parts of one and the same individual, how could it produce by seed all manners and kinds of Apple trees, even to Crabs? And why should it be so very difficult to reproduce the identical variety or kind by means of its pips? And the same of an isolated Larkepur, Mirabilis Jalapa or Portulaca, the seeds of which will produce all sorts of colours different from that of the parent. In this matter we are quite in the dark as to the experimental part, even the apparently very simple question, Is there, or is there not, a difference in the aggregate produce of hermaphrodite flowers impregnated by themselves, and that of such flowers impregnated by others on the same tree? has never been positively solved. As, however, Nature never does anything uselessly, and as an ample crop of impregnated blossoms would be sufficiently secured by the work of bees and other insects aided by the wind, were certain fruit trees and other plants with hermaphrodite flowers simply monoical—i.e., with the sexes in separate blossoms—we may naturally surmise that there must exist some difference in the result of the two sorts of fecundation.

Now, if it should be found correct that these crossings and inter-marriages between branch and branch, blossom and blossom, by means of insects and the winds are really the cause of the variations in the colour of flowers, the taste of fruits, and the conformation of the plants produced by one isolated plant, the next question would be, Might not similar selections among blossoms be made that are habitually made among buds for cuttings and grafts, and with like results? We choose for a cutting, a short spur-like shoot at the base of a Pelargonium to obtain a compact bushy plant, and a large vigorous shoot near the summit if we wish, which is seldom the case, for a tall and straggling plant, and the same with grafts. Just so would not artificially impregnating a blossom by another on the same branch, or at least on another branch of the same sort, both partaking of the nature which one would desire to see reproduced

in the seedling, if duly protected from foreign pollen by a gauze in the usual way—be the means of reproducing at will either a vigorous and wood-producing tree, or a more compact and fruit-bearing one, one suited for a standard, a dwarf, or an espalier? Would not the produce of two flowers situated on a branch habitually more loaded with fruit than the rest, have a tendency to produce a more productive tree than a promiscuous fecundation? We usually put it in this way, that a man knows what he sows, but does not know what will come up. I would say on the contrary, that a man does not know what he sows, and it is in the hope that the practical minds of British gardeners once interested in the question, will grasp, sift, ventilate, and eventually bring something out of it, towards enabling us to know really what it is we are sowing, that I venture to bring the subject under the notice of the readers of your widely circulating Journal. One man's whole lifetime would not suffice to experimentally elucidate such a question, and the aggregate observations of very many investigators can alone do so.

The subject, of course, is as old as the hills; but it would be a great mistake to suppose it has ever been disposed of, or even directly treated in the way proposed. Darwin and many other able physiologists collaterally hint at it, but it has never been practically taken hold of, or the results would show it. It cannot be admitted that Nature leaves anything to chance. If only one single pip on a whole Apple tree be found to reproduce exactly the variety, or at least sufficiently exactly for our limited mortal senses, that one pip being necessarily created by some rule, there is no reason why man should not find out that rule, and by artificial means obtain a hundred or a thousand. If 50 per cent. turn out Crabs, it must be owing to something; that something may be found out, and sowing Crabs avoided, and the question holds good until it be proved that by some law of nature an ovary impregnated by an anther, no matter where taken from, can never reproduce the parents with sufficient accuracy to admit of being considered the identical variety, or that chance alone governs such births, neither of which propositions can, I think, be in any way borne out by facts.—FREDERICK PALMER, *Versailles*.

QUEEN WASPS.

I do not think that Mr. Scholfield and others need be much alarmed at the great number of queen wasps which have made their appearance, as it by no means follows that they will produce a nest a-piece. For several years I noted their abundance or scarcity, and certainly for six in succession the numbers in spring and autumn bore an inverse ratio to one another. This is many years ago. The first year I noted it was, I think, 1847, but, if I recollect rightly, it was about 1852 or 1853 that some articles appeared in the "Zoologist" on the subject, and it was shown that out of some hundreds of queen wasps dissected in a year when they were exceptionally abundant, none showed signs of impregnation. A neighbour of mine has sometimes paid as much as £5 or £6 a-year for the destruction of queen wasps, but I never found his fruit less damaged than my own.—DUCKWING.

RIDGE MELON GROWING.

Last year I determined to try growing Melons out of doors on the ridge principle. I therefore procured some of a variety described as green flesh, and named Achapenorricher—what a name! Having sown six seeds in a pot in the early part of May, I placed it in a hotbed, and in a few days five plants made their appearance. In due time these were potted-off, and in the beginning of June were planted out of doors on a ridge composed of good stable dung and covered with soil; each plant having a hand-glass placed over it, and when fairly started this was removed.

The plants soon began to grow vigorously, and from time to time ten well-set fruit made their appearance, which grew to the average size of 7 lbs., some being over and some a little under. Contrary to my expectation, they all turned out to be scarlet-fleshed, with few seeds, and a very excellent flavour, being superior to the Malvern Hall, which I had in a pit close by. That excellent horticultural judge, Mr. William Barnes, of Camberwell, tasted one of the fruit, and pronounced the flavour equal to any scarlet-fleshed Melon he had had submitted to his judgment that season, and requested me to let him have some of the seed, which I have done. So pleased am I with the result that this year I intend growing two or three dozen plants on ridges, and as I have heard that the old Beechwood

will do well without glass, I shall try it as a green-fleshed kind.

Experience has taught me that if it rains, the fruit should be covered either with a bell-glass or with a flower-pot to keep the wet off, as they are rather apt to rot around the stalk.

The Malvern Hall Melon is quite out of my good books. Of five plants that I grew no two bore fruit alike. For frame work this year I am growing Bailly's Eclipse and the Golden Queen.

I shall be much pleased to hear of the success of others with out-door Melons of good flavour, shape, and size; also whether anyone has been successful with growing the Beechwood without the aid of glass. As Melons are so deliciously cooling as a summer fruit I think the experiment well worthy of a trial, and as my attempt last year was such a perfect success, I wish to make it known.—HARRISON WEIR.

THE VINEYARD.

"OBSERVER'S" estate, named as above, is situated not far from the north-eastern boundary of Sussex, and is exactly 260 acres in extent; part of that area, however, is occupied by the home farm, but the remainder, by far the larger portion, consists of lawns, shrubberies, and flower and kitchen gardens. The natural advantages of the position are very great; the ground is rising but not hilly, sheltered for the most part from the north by hills, but open towards the south, in which direction from some parts of the grounds beautiful views are obtained of Brightling Hill, and Fairlight, thirteen or fourteen miles off. Fairlight Mill was once visible, but all who have visited Hastings will regret to learn that it exists no longer, having been burnt down a short time ago; still it is believed that steps will be taken either to restore it or replace it with some suitable landmark. The old mill has passed away, but not so the memory of Fairlight's romantic glen, which will long remain with many a sojourner in its neighbourhood.

Thus sheltered from the north, thus open to more favourable aspects, far from the smoke of towns, and in a county remarkable for the mildness of its climate, the grounds present conditions peculiarly favourable to vegetation, and as a result, among the great variety of trees and shrubs there are many specimens of unusual size and beauty. *Cryptomeria japonica*, the Deodar, Cedar of Lebanon, *Picea Pinsapo*, *Cupressus Lawsoniana*, *Wellingtonia gigantea*, and many other Conifers, as well as the Purple Beech, Evergreen Oak, and all shrubs commonly planted, are represented by numerous flourishing specimens. The Portugal Laurels by the side of a walk 300 yards long, form of themselves quite a feature; they are very nearly uniform in size and shape throughout, and densely clothed to the ground, forming roundish, somewhat conical bushes 9 or 10 feet in diameter. On the opposite side of this walk it is intended to plant *Picea Pinsapo*, and it may be added that in the borders in front of the shrubs 10,000 bedding plants are turned out in summer.

Passing an archery and cricket ground we reach a rustic gate on the left, which opens into a hardy fernery, where there are 150 kinds planted in road scrapings among blocks of Kentish rag, and thriving well. On returning to the walk glimpses are obtained of a museum and conservatory, with an aviary attached, covered with shingle, the weatherworn look of which adds to the rustic character of the building—no modern one it is either in appearance or reality, for it most resembles an old monastery, but, as "OBSERVER" remarked, it might in one sense be said to belong to the composite order of architecture. An old oak chimney-piece in the inside is of the reign of Henry VII., though the bulk of the building is much more recent. The conservatory contained a large plant of *Wistaria sinensis*, whose splendid clusters of lilac flowers hung in dense clusters from the roof; fruiting Orange trees, Azaleas, and other plants in flower, giving it quite a gay appearance. In the aviary were a score of Golden Pheasants in full plumage, radiant in scarlet and gold. Silver Pheasants have also been kept for forty-seven years, and this has been the first year there has been a pied hen. In the grounds near the aviary there are several fine old Yews, notably two Irish Yews, among the first ever planted. They are about 25 feet high, and extremely handsome; two others not far off are less in height by about 5 feet, and though well furnished are not such fine specimens, owing to their having had a less favourable position. Several bushy-headed Portugal Laurels are deserving of mention, not because of their height, for that is little more than a yard,

but their stems, which are of extraordinary thickness. They had become so large that they overshadowed the place, and a sharp remedy was applied—the saw. By the side of a continuation of the walk along which the large Portugal Laurels are growing, besides many other fine specimen shrubs, is a remarkably handsome Evergreen Oak, 25 feet high. It may here be remarked, that large trees and shrubs are frequently removed at this place, but they are never carried on wheels, being always dragged by horses on a sledge of iron with rings at the corners.

The next place entered was the old kitchen garden, which is walled in, and contains a house 40 feet by 17, in two divisions, used as a vinery and house for Ferns and softwooded plants, the Vines young plants, mostly of new varieties. The plants in the houses as well as the out-door department were well managed by Mr. B—, the gardener in charge, and everything was very clean and neat. By the side of one of the walks on a rather steep incline there were V-shaped drains of brick-on-edge at the sides, with the Box edging rising above the brick on the border side. These drains, which are neat, and merely require a brush-out to keep them clear, are also used by the sides of the drives where required, and are not readily damaged by carriage wheels. Another kitchen garden, the principal one for the supply of the establishment, is enclosed by close well-kept Thorn hedges, and covers 2½ acres. The aspect is not the most favourable, as the ground slopes towards the north, and although the full sweep of the wind from that quarter is broken by eminences, still, more shelter is desirable. The ground, too, is heavy, being a marly clay, but very good crops are obtained, though, Mr. S—, the gardener, remarked it was sometimes annoying to find his neighbours bringing their early Peas, &c., some while before he could do so; however, he had the compensation in summer and autumn of his crops remaining longer in use. A three-tined fork, with the tines a little flattened-out at the bottom, is found very useful for digging, as the soil is too heavy for four-tined steel forks, and the same tool is also much used in the neighbouring Hop plantations. The whole of the ground had either been cropped or was in course of preparation. The Strawberries were not very strong, probably owing to the last hot dry summer, but the pyramid Pear trees were in fine condition, and promised to bear heavy crops. Sutton's Ringleader Pea, of which there were several rows, was in bloom, which it is here found to be nine or ten days sooner than Sangster's No. 1, of which a few rows had been sown at the same time. For cleaning and stirring between the rows of vegetables, as well as for the ground elsewhere, a thrust-and-draw-hoe is found a very serviceable and expeditious implement.

Pits and frames in a back garden were filled with fruiting Cucumbers, Hamilton's Market Favourite being the variety preferred, and a large stock of plants for bedding-out in the flower gardens, as Pyrethrum Golden Feather, *Oxalis corniculata rubra*, Japanese Honeysuckle, *Alternantheras*, *Lobelias*, and Tricolor-leaved and other Pelargoniums; of the latter Rebecca and Excellent are favourite kinds. Mr. S— has also a seedling with large trusses of scarlet flowers, and which he described as being of a free-flowering rather dwarf habit; and among several other seedlings is one raised from Le Grand, which he has called King Alfred, more compact in truss than its parent, more orange in colour, but with smaller flowers. He had, besides, several promising seedling Tricolor varieties in one of the houses, and a seedling golden-leaved *Lobelia* with nearly white flowers. The houses just referred to form a small range, in three divisions, 90 feet long by 10 wide, and are used as vineries, for growing plants for rooms, and for forcing Kidney Beans, &c. Black Hamburg is the Grape chiefly grown here, but there are, besides, Vines of the Royal Muscadine, Lady Downe's, Black Prince, and Canon Hall Muscat.

The principal flower garden, laid-out by Mr. Eyles, of the Royal Horticultural Society's Gardens, South Kensington, is at once simple in its design, well adapted to the situation, and capable of being rendered effective both in winter and spring. Though it is not possible to render the details intelligible without a plan, its main features consist of a semicircular terrace garden in front of the house, with a low stone wall, having vases on it at intervals, two wings parallel to the front of the house, and a series of beds at the side, corresponding with circles planted with standard *Rhododendrons*, beyond which, towards the outside, is a border swept out to correspond with the circles, and planted with evergreen *Berberies* and variegated *Hollies*. At present the beds are occupied with *Arbore-vite*, *Irish Yews*, *Euonymuses*, and other plants, and bulbs

now over, which will shortly give place to the bedding-out plants. From this garden fine views are gained southwards, the village church coming in in the foreground, and the hills on the Sussex coast in the distance, with wooded hilly country between. On the lawn 12-inch mowing machines used by one man were at work, these being found more economical than larger sizes with two men.

It is, however, in a private garden that the most remarkable features of the place are to be found, and of these the most interesting are the cylinder vineries and double walls of glass, both of which are "OBSERVER's" own inventions, or rather two of his inventions, for he is fertile in these, and to him we are indebted for the ground vinery and other useful contrivances. The cylinder vinery was fully described in pages 386 and 387 of vol. xiii., and a representation was there given of one of the hexagonal form. These vineries may, however, be made with four, six, eight or more sides, and of various sizes, but the octagon form is that which their inventor appears to prefer, and from its approach to the circle is probably stronger than those with a less number of sides. He has examples of several kinds and sizes, but that which we shall select is an octagon 9 feet in diameter and 14 feet high. The posts at the angles are of deal, and being boiled in creosote may be expected to last many years; although less than 4 inches wide by 1½ inch thick, from being connected with each other by three-eighth-inch iron wire, and firmly fixed in the ground, the framework they form is so strong that it can hardly be shaken by a man's strength, and neither it nor the glass has suffered from winds, although the position is rather exposed. To give greater strength, at 7 feet high there is a slight top framing of deal like the posts, and glass above that again. The glass used is 21-oz., in squares 20 inches by 15, which are slid down the grooves in the posts, and originally they simply rested on each other, but it was found that owing to the varying thickness of the glass they rattled with the wind; and to obviate this thin strips of copper bent at right angles are introduced at each corner of the square of glass, and firmly fix it in the groove. The top is quite open, but it is found that the temperature in the octagon is from 10° to 15° higher than outside, but at night it is very nearly the same, both outside and inside. It is, therefore, evident that the octagons will not protect from frost, though affording a higher day temperature; and in proof of this it may be mentioned that the Vines in them wherever wet with dew had had their young leaves blackened by a sudden May frost, severe enough also to brown the Laurel. In future it is intended to use a covering of hop sacking boiled in creosote, an excellent material, to prevent injury from this cause. The peculiarity of the cylinder vinery as regards ventilation was pointed out in page 387 of the volume previously referred to—namely, that the glass touching the ground no air enters below, but that there is constantly a current of cool air descending by the centre and currents of warm air ascending by the sides. While the fruit trees in such cylinders enjoy a day temperature higher than they would have in a given place, that heat is given by natural means, and they are fully exposed to light, dew, and to the free air. Accordingly, we are informed by "OBSERVER" that he has found the fruit ripened under these circumstances is possessed of a higher flavour than that produced in glass structures in which the atmosphere is confined by closed roofs. It is not for Vines only that the cylinder vineries are employed, but Peaches, Plums, and Cherries are also grown in them, and give promise of bearing fine crops; they might, therefore, be more appropriately termed fruit cylinders.

Whatever advantages the cylinders present are also possessed by the double walls of glass, which are "OBSERVER's" latest invention in fruit culture, and they afford not only a higher day temperature by 6°, but greater protection from frost, for wherever the Vines were covered with glass they were uninjured by the frost before mentioned, and this in the walls as well as in the ground vineries, whilst elsewhere the young shoots were browned and blackened. The construction of the double walls is very simple; they consist of two surfaces of glass inclined towards each other, but open at top. The width at bottom is 6 feet 6 inches, at top 2 feet 9 inches, but it is intended to increase the amount of incline so as to put on a protection of hop sacking more conveniently in case of necessity. Their construction in other respects is similar to that of the cylinders, the glass being made to slide down in grooves, and the sashes being of the same size—namely, 20 inches by 15. The sashes are let into a groove in the stone base, and straining wires pass through the woodwork at the base, and are there

clenched on the outside, extending diagonally across every four widths of the glass, thus trussing the whole together. A walk 3 feet wide edged with stone passes along the centre, and on each side there is a narrow border, in which the Vines and other fruit trees are planted. The doors at the ends are likewise tied by wires crossing each other diagonally, and these are tightened by simply pulling down a ring of copper wire at their intersection. Of course, the two sides inclined towards each other must be tied by cross pieces every so far, where any considerable length is put up. The Peach trees in a wall of this description planted about a month ago, as well as the Vines, were in excellent condition, notwithstanding the frost; and in addition to their value for fruit culture, such walls would form an agreeable promenade, besides affording shelter to vegetation near them. They are very cheap, costing only 6d. per square foot, very simple, and will, doubtless, prove very durable. They are, of course, at present on trial: there is much to learn respecting them; temperatures will have to be observed by day and night, for comparison with those in the open ground, and crops will have to be gathered in successive years, and their quality tested, before all the advantages of the double walls of glass can be said to be proved: still from what has been already observed, they appear to possess the elements of success, and that in no small degree. Let their merits be once established, and the inventor will have added yet another claim to the debt of gratitude which the horticultural world already owes him.

The orchard house is another structure well worthy of remark. It was erected ten years ago, and is constructed in the most solid fashion, the walls below the front and end sashes being of stone from a large quarry close at hand. It is 71 feet long, by 30 feet wide, and 14 feet high to the top of the span roof, and though provided with hot-water pipes, these are only used in frosts and for ripening the wood. The Vines, which are 4½ feet apart, are spur-pruned, and sufficient light is thus admitted to the thick-stemmed standard Peach and Nectarine trees, which are planted out in the central border. One of these alone produced twenty dozen of Peaches one season, but the result of such a heavy crop being taken was a small production in the following year. Ten or twelve dozen are found to be enough. Some idea of the large return which may be obtained from a well-managed orchard house may be formed from the fact that, besides other fruit, two hundred dozen of Peaches and Nectarines, and 700 lbs. of Grapes, were the return of last year. Two large Cherry trees, one a May Duke, the other an Elton, form a grand arch at the entrance, and their cordon branches are yearly set with fruit so thickly as to resemble ropes of Onions. Near these was Standish's Early Frontignan Grape, a new kind, which is spoken of very highly. This was worked on the Black Hamburgh, and was growing most vigorously. It made a growth of 16 feet last year. It may be useful here to note that the following temperatures were observed in this house—on the 11th of April, at noon, 83°; on the 13th, at 12.25, 90°; and on the 27th, at 11.13 A.M., 91°.

In addition to the foregoing, there are other features about the place worthy of notice, but we shall only mention the warm vinery. This is 110 feet long, by 20 feet wide, and was formerly in two divisions, but the partition has been taken away, it having been found that one end, which is 5 feet higher than the other, is always the warmer, and that the crop is there ripe a fortnight earlier than in the lower end of the house, owing to the natural ascent of the heated air. The Vines are planted inside, and a portion of the width of the border is covered with sashes, which, when the crop is off, are removed, and the Vines have all the benefit of the free exposure of the soil to air and moisture. Among the varieties are Chasselas Vibert, White Tokay, bearing immense bunches, Muscat of Alexandria, Chasselas Musqué, White Frontignan, Royal Ascot, and Royal Muscadine. With Grapes from the first two several prizes have been taken. It may be added that "OBSERVER," like other people, has been troubled in summer and autumn with wasps, and, determined not to be conquered by them, employs for their exclusion cotton netting brushed over with indiarubber dissolved in shellac, thus rendering the fabric not only stiff and waterproof, but wasp-proof as well.

CATS VERSUS NEMOPHILAS.

CATS are peculiarly partial to these pretty annuals; their fondness is not confined to one variety, but seems to be shared by all alike. The beds here are nightly overrun with them, and even in the daytime I find them squatting amongst the

Nemophila, and evidently enjoying it much. Others have remarked it as well. Cats are also, as you observe, partial to the roots of Valerian, but not more so than to the Nemophilas, and to some of the species of Viburnum, against the bark of which they rub, so as to give it quite a polished appearance. Can anyone assign a reason for these fancies or preferences of our feline friends? It can be little else than fancy, as they do not eat any of the plants, so far as I am aware.—PUSS IN BOOTS.

CRYSTAL PALACE SHOW.

MAY 15TH.

WITH that desire always to cater to the interest that the public generally take in the floral exhibitions at the Crystal Palace, there was this year added to the general features of the great Spring Show an exhibition of bouquets which was intended to be international; but, alas! for the public spirit of our friends across the water, no French exhibitor contributed, and but one Belgian—Mr. Van der Dreisache, of Ghent. In the general aspect of the Show I may at once say that greenhouse and stove plants were never larger and finer, nor, perhaps, so numerous; that Orchids, though few in number, were good; and that there was a great falling-off in Azaleas, Pelargoniums, and Roses. In one of these classes this was to be attributed mainly to the total withdrawal from exhibition in Pelargoniums of Messrs. Frazer, Turner, and Bailey, who used so largely to contribute; while Azaleas, as we have seen them this year, have generally been deficient in quality, looking very much as if the excessive heat of last summer, and the constant watering thereby rendered necessary, had weakened the plants.

As the bouquets were the novel feature of the exhibition I would say a few words on them first. Some were exceedingly creditable to the taste and skill displayed. This was notably the case in those which obtained the first and second prizes. Some were exceedingly ugly; one, especially, was such an abomination as I could hardly have conceived it possible for any human being, much less a lady, to have attempted. One thing, at least, it showed—a considerable amount of courage in putting it up alongside of the others, instead of putting it under the table or anywhere. I may observe that there is one general fault to my mind in the arrangement of bouquets as practised here, and that is overcrowding. Fewer flowers would be better, and more scope would be given for arrangement. Another thing I object to is the formal arrangement, which is too much the fashion abroad as well as here. For instance, there was a very pretty bouquet with some Moss Rose buds to break the uniformity of surface; but they were, unfortunately for the effect, placed in such regular rows round as to completely spoil it. Had they been irregularly placed it would have been very beautiful. Nor must I omit a very pretty bouquet of wild flowers, which was highly commended. The Belgian collection was not very remarkable. The bouquets were too flat and exceedingly heavy, owing to the flowers being placed in clay. There was no doubt as to this being the most attractive part of the Show, it being most difficult to get anyway near it after the public was admitted.

Next in point of interest were, I think, judging from the crowd and the note-books in requisition, the variegated-leaved Pelargoniums—the Tricolors exhibited by Messrs. James Carter & Co. and Mr. Charles Turner, and the Bicolors by Messrs. Downie, Laird, & Laing. Among those of the former firm were Prince of Wales, a very bright variety, which we saw exhibited last year in great perfection; Sir Robert Napier, a very dark-zoned-leaved plant, with brilliant scarlet blotches and deep golden edge; Mrs. Dunnett, a very flat-leaved plant of compact habit, which will doubtless be a general favourite by-and-by. Mr. Turner had Mrs. Headly, very handsome foliage; and Middle Nilsson, very bright, and of dwarf habit. Messrs. Downie, Laird, & Laing had Crown Prince, a splendid variety in the Bicolor section; Prima Donna, and also still more new, Imperatrice Eugénie and M. Morris. Before leaving these I would notice a very ingenious contrivance for covering plants intended for show. Messrs. Carters' small baskets of Tricolors were covered over with one piece of oiled silk, which was taken off without the least trouble, and perfectly protected the plants from the dust.

Among new Azaleas there was a very fine light one called Mrs. Turner, and a very dark one, La Superbe, both exhibited by Mr. Turner, of Slough. Of large-flowered and fancy Pelargoniums there were but few staged. Some of the Fancies were very bright, Leotard and East Lynn especially; and a white-edged bedding Pelargonium exhibited by Mr. Turner, called Bright Star, deservedly received a first-class certificate. The same gentleman also exhibited a fine collection of Tulips, and a large number of Alpine Anemones, of these Gaiety, Golioth, and Superb, were the most remarkable. Mr. F. Perkins, of Leamington, exhibited a very beautiful perpetual-flowering yellow Picotee, which I venture to think will be much prized if it keep up its character of blooming both in spring and autumn, as it seems disposed to do. It does not seem to have the long tree habit, but is more herbaceous.

In Pelargoniums, the first prize was taken by Mr. Ward, gardener to F. G. Willins, Esq., Leyton, who exhibited well-grown plants (I fancy some of Mr. Bailey's famous plants were here) of Garibaldi, Middle Patti, Etna, Fair Rosamond, Norma, Ariel, Lilacinn, Sir C. Campbell, Regina formosa, Empress Eugénie, Desdemona, and Lord Canning. In Fancies, the first prize was taken by Messrs. Dobson and

Sons, with Godfrey, Delicatnm, Lucy, Silver Star, and Roi des Fantaisies. The first prize for large-flowering kinds was also taken by the same firm, with Maid of Honour, Lilacium, Mille, Patti, Favorite, Desdemona, Beacon, Fair Rosamond, Charles Turner, Patroness, Constance, &c.

The absence of Mr. Wm. Paul, and Messrs. Lane & Son, as competitors in Roses, made a very material difference in the competition, which was confined to Messrs. Paul & Son and Mr. Charles Turner, who were placed as first and second, in the large collection, and were equal first in the smaller one. The varieties exhibited were not different from former years, comprising Charles Lawson, Souvenir d'un Ami, John Hopper, Contesse Cécile de Chabrillant, Général Jacqueminot; and Madame Marie Croddé, gave promise of being a good flower, but we shall soon see more of the new Roses. I have only to add that the same excellent arrangements which always mark the Crystal Palace Exhibitions, were carried out, as heretofore, under the immediate superintendence of Mr. Wilkinson.—D., *Deal*.

THE collections of stove and greenhouse plants in flower were very numerous, the specimens on the whole very good and in excellent bloom, but the kinds almost, if not quite, the same as last year. Mr. W. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, was most deservedly first in the class for sixteen, with, among others, beautifully grown and flowered specimens of *Eriostemon pulchellum* and *nerifolium*, *Epacris miniata splendens*, *Ixora coccinea*, *Pimelea spectabilis rosea*, *Adenandra fragrans*, *Chorozema varium nanum*, *Acerophyllum venosum*, *Clorodendron Thomsonae Balfourii*, *Azalea Iveryana*, *Pimelea mirabilis*, and *Polygala Dalmatiana* not fully out. Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, was second with *Tetratheca cricifolia*, *Acerophyllum venosum*, *Leschenanthea formosa*, of which the scarlet flowers made a pleasing variety, fine plants of *Erica Cavendishii* and *ventricosa magnifica*, a large *Genetyllis Hookeri*, *Eriostemon huxifolium* and *nerifolium*, *Allamanda grandiflora*, not fully out, but which will be very fine, *Azaleas*, &c. Mr. Wheeler, gardener to J. Philpott, Esq., Stamford Hill, and Mr. Kemp, gardener to the Duke of Northumberland, Albany Park, Dorking, were third and fourth.

In the nurserymen's class for ten, Mrs. Glendinning & Sons of the Chiswick Nurseries were first with an excellent collection, most noticeable in which were a halloo-trained *Kennedia inophylla floribunda*, *Stephanotis floribunda*, *Pimelea spectabilis*, *Aphelexis macrantha purpurea*, and *Eriostemon huxifolium*. Messrs. Jackson & Son, Kingston, were second; Mr. Williams, Holloway, third. In the corresponding class for amateurs the prizes went to Mr. Wilkie, Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet Lodge, and Mr. Peed, an extra prize being awarded to Mr. Kemp. Among their collections was a splendid plant of *Medinilla magnifica* from Mr. Donald, *Genetyllis talpifera* and *Hookeri*, *Dracophyllum gracile*, *Chorozemas*, *Rhynchospermum jasminoides*, *Clorodendron Thomsonae*, *Boronia tetrandra*, the pretty rose-flowered *Adenandra fragrans*, *Epacris*, *Azaleas*, and *Ericas*. In the amateurs' class for six, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first with a fine plant of *Chorozema Chandleri* 4 feet in diameter, *Clorodendron Thomsonae Balfourii*, very fine, *Stephanotis floribunda*, large, and in beautiful condition, *Erica Cavendishii*, *Aphelexis macrantha purpurea*, and a rather small plant of *Genetyllis talpifera*. Mr. Wright, gardener to A. C. Roberts, Esq., Avenue Road, Regent's Park, was second with a good collection; Mr. Wilkie, and Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., being third and fourth.

Mixed collections of flowering and fine-foliaged plants though good, were not remarkable. Mr. Laing, gardener to P. W. Flowers, Esq., Furze Down, Tooting Common, was first for twelve, with a collection in which were good examples of *Dracaena indivisa*, *Yucca aloifolia variegata*, *Dasylirion longifolium*, *Pandanus ornatus*, *Dicksonia antarctica*, *Aphelexis macrantha purpurea*, *Ixora coccinea*, *Erica ventricosa coccinea*, and a yellow-flowered *Mahernia*, which, though free-flowering, has rather a weedy appearance. Mr. Young, gardener to W. H. Stone, Esq., Leigh Park, Havant, was second with a good collection, and equal third prizes were awarded to Mr. Foreman, gardener to G. Manle, Esq., Denmark Hill, and Mr. Gell, gardener to Mrs. Beaufoy, South Lambeth. The former had a fine *Anthurium Scherzerianum*, and the latter fine specimens of *Sanchezia nobilis variegata*, and *Pandanus elegantissimus*. For collections of six, Mr. Wilkie was first, Mr. Peed second, and Mr. Carr third. Mr. Young and Mr. Woodward had also good collections. Among the plants shown were good specimens of *Rhododendron Conntess of Haddington*, *Erica insignis* and *Spenceriana*, *Dracophyllum gracile*, *Leptopteris superba*, *Zamia Lehmanni*, *Crotons*, *Alcassia metallica*, *Maranta Veitchii*, and *Pandanus javanicus variegatus*.

There was an extensive display of Heaths, and many of the specimens were all that could be desired, though, as a whole, the show of these plants appeared less effective than usual. The most conspicuous for their excellence were *Victoria*, *Ventricosa* of different varieties, *Perspicua nana*, *Beaumontiana*, *Alberti*, *Candidissima*, *Tricolor elegans*, *Massoni major*, *Eassoniana*, *Tortuliflora*, *Aristata major*, and *Candolleana*. Mr. Rhodes, Messrs. Jackson, and Mr. Morse among nurserymen; and Messrs. Ward, Wheeler, and Kemp among amateurs, took the prizes for eight kinds. These for six kinds went to Messrs. Peed, Ward, Carr, and Wheeler.

Azaleas, as already remarked, were not equal to what they were at previous shows; exception must, however, be made of the magnificent plants from Mr. Carson, gardener to W. R. G. Farmer, Esq., Nonsuch Park, Cheam, who was first for eight. These consisted of *Triumphans*, *Model*, *Murrayana*, *Formosa*, the yellow *Sinensis*, *Exquisite*, *Stanleyana*, and *Criterion*. Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart., and Mr. Gell, gardener to Mrs. Beaufoy, were second and third, with very good specimens of *Apollo*, *Violacea superba*, *Roi Leopold*, *Iveryana*, *Mrs. Fry*, and other kinds. Among nurserymen the prizes for eight were taken by Mr. Williams, Mr. Turner, and Mr. Rhodes; and for six, by Mr. Williams, Mrs. Glendinning & Sons, Messrs. Dobson, and Mr. Rhodes. In the amateurs' class for six, Mr. Chapman was first with excellent bushy plants; Mr. Wilkie, Mr. Woodward, and Mr. Wheeler, Regent's Park, taking the remaining prizes.

Of Orchids there was but a small show, though some of the specimens were very good. Mr. Young, gardener to W. H. Stone, Esq., M.P., Leigh Park, Havant, was first for twenty with a good collection, in which we noticed *Cypripedium Lowii*, fine *Vandas*, especially two varieties of *Vanda tricolor*, *Phalenopsis amabilis* and *Schilleriana*, the latter with a fine branching spike 3 feet in length; *Acrides Fieldingii* and odoratum, a very fine *Cattleya Mossie*, *Oncidium sphacelatum*, and *O. pulverulentum*. Mr. Peed, who was second in the same class, had a fine *Oncidium amphybatum majus*, *Vanda tricolor*, *Dendrobium chrysotoxum*, &c. In the nurserymen's class for ten Mr. Williams took the first prize with a splendid plant of *Acrides virens*, not, however, in fine bloom, good *Vandas* and *Cypripediums*, a finely coloured *Cattleya superba*, *Anguloa uniflora*, and others. The best collection shown, however, was that which was first in the class for twelve, and which came from Mr. Wilson, gardener to W. Marshall, Esq., of Enfield, who had beautiful examples of *Odontoglossum Alexandræ*, *Oncidium serratum*, *Cypripedium villosum*, *Odontoglossum luteo-purpureum*, *Lycaste Skinneri*, *Cypripedium candidum* with nine flowers, and petals upwards of 2 feet long, *Lælia grandis*, a *Stanhopea*, said to be new, with cream-coloured flowers, *Acrides crispum*, and *Trichopilia crispata*. Mr. Eckford, gardener to the Earl of Radnor, Coleshill, was second in the same class. His specimens of *Saccolabium guttatum*, *retusum*, and *præmorsum* were very fine, especially the last, which had eight spikes, two of which were of great beauty.

In addition to the above, groups of plants were exhibited by Messrs. Carter; Downie, Laird, & Laing; Williams, Turner, and Ware; also some fine herbaceous *Calceolarias* by Messrs. Dobson, of Isleworth.

ROYAL HORTICULTURAL SOCIETY.

MAY 18TH.

FRUIT COMMITTEE.—Mr. John Lee in the chair. Mr. J. Miller, gardener to Lord Foley, Worsnop Manor, sent a nice dish of Brown Turkey Figs, rather pale in colour, but well ripened, and of excellent flavour; also a dish of *Violette*. *Hâtive Nectarines*, which were highly coloured, but rather acid. These received the commendation of the Committee. Mr. Gardiner, gardener to E. P. Shirley, Esq., Ealington Park, Stratford-on-Avon, sent a collection of eight sorts of Apples in a good state of preservation; also a dish of fair-sized *Elrange Nectarines*, and a small bunch each of newly-ripened Black Hamburgh and Trentham Black Grapes. These were sent to test their relative flavours, but the Committee could not discover much difference in that respect; both Grapes were rather poor and watery. A special certificate was awarded for the exhibition. Mr. Gardiner also sent a branch cut from an Apricot tree, heavily clustered with fruit, to show the beneficial effects of protecting the blossoms by a covering of frigidomo.

Mr. Charles Turner, of the Royal Nurseries, Slough, sent three very handsomely-grown specimens of Blue Gown Cucumber. These measured upwards of 26 inches in length, were of a fine uniform thickness throughout, with a few black spines, and covered with a fine bloom. This variety is the same as that which obtained the first prize at the recent competition for Cucumbers. A first-class certificate was awarded.

Mr. Earley, gardener to F. Pryor, Esq., Digswell, Welwyn, sent a most beautiful dish of Mushrooms, clean and excellent, for which a special certificate was awarded.

Mr. J. Barnard, 12, Cumberland Road, Clapton, sent a Mushroom 12 inches in diameter, too coarse and repulsive to be of any service. It appeared to be the *Agaricus arvensis*, or Horse Mushroom. Mr. J. Mills sent some samples of Grand Admiral Lettuce, a profitable winter Cabbage variety.

From the garden of the Society, Chiswick, came some examples of Sugar-loaf Lettuce, a brown Cos, sent out by Messrs. Nutting & Sons. These were very fine, the hearts firm and large. A first-class certificate was awarded. There also came from Chiswick examples of a blood-spotted Cabbage Lettuce, received from Messrs. Benary, of Erfurt, named Wallblut, the colour of which, however, militates greatly against it. Some samples of Potatoes were also exhibited, from which the haulm was wanting, although the young Potatoes were forming plentifully underneath the ground. This is not an uncommon occurrence; this season, unfortunately, it is rather too common, some members of the Committee stating that it was general with all the early

varieties, such as the Ash-leaved Kidney. The cause of this was attributed to the coldness of the soil around the young shoots when they were beginning to push in March, which, as will be recollected, was extremely unpropitious.

FLORAL COMMITTEE.—Rev. Joshua Dix in the chair.

Messrs. Veitch sent a large collection of plants, some of them of much interest. The following received first-class certificates—viz., *Vriesia Glazoniana*, *Martinezia Lindeniana*, *Agave Verschoffeltii*, *Miltonia virginialis*, *Lailia purpurata alba*. Second-class certificates were awarded to a new dwarf species of *Sarracenia*, and *Odontoglossum Reichenheimii*. In the collection were several new plants—*Gloxinia Rachel*, an upright flower, pale lavender, *Pandanus farcatus*, *Nidularium pictum*, *N. splendens*, and *N. marmoratum*, *Demonorops melanochates*, and several others.

Messrs. Standish & Co. received a second-class certificate for a very beautiful seedling *Rhododendron Beauty*, the flower well formed, of delicate Apple-blossom tint. The foliage was anything but good; probably when stronger this may improve.

Mr. Purcell, Plumstead, sent *Saccolabium curvifolium*, a very nice specimen, and a second-class certificate was awarded. Mr. George, Patney Heath, sent a *Nosegay Pelargonium* called *Miss Roso*. G. F. Wilson, Esq., exhibited a very neat and pretty yellow Lily, *Lilium Szowitsianum*, not unlike *colchicum*, but paler.

Messrs. A. Henderson, Pine Apple Place, sent *Pteris serrulata* variety, *Lastrea Sieboldii* variegata, and *Begonia hybrida* *Dachartrei*, a hybrid between *B. Pearcei* and *subulata*; the flowers were not open.

Mr. T. Bunney, gardener to the Rev. F. Bendon, was awarded a special certificate for a very fine specimen of *Cattleya Mossie*. Messrs. Carter had a special certificate for a very fine collection of *Tricolor Zonal Pelargoniums*. There were some exceedingly promising seedlings among them. No award was made, as the Committee had decided that as there was a special Zonal exhibition on the 22nd, no certificate should be given till that day. Messrs. Carter also sent *Colens Beauty* of *Widmore*, the same sport as Messrs. Downie, Laird, & Laing exhibited at the previous meeting; also *Golden Tom Thumb* Wallflower, which, although very striking, must be proved to be constant in its colour.

Mr. J. Noble, Sunningdale, sent three seedling *Clematis*. Lady Lonsborough, a pale lilac variety, received a first-class certificate; the others were *Duke of Buccleuch* and *Estelle Russell*, not sufficiently distinct from those exhibited at the last meeting. A special certificate was awarded for three baskets of *Rhododendrons*—*The Queen*, a very delicate pale whitish pink, and *Duke of Cambridge*, a bright rosy carmine with spotted petals, two very nice flowers, which have been before the public for some time.

J. L. Wynne, Esq., sent cut flowers of *Rhododendrons*; Mr. Turner, Slough, two new *Azaleas*—viz., *Miss Turner* and *Reine Marie Henriette*, not equal to many others; and Mr. Melville, Dalmeny Park, Edinburgh, some hybrid seedling bedding *Pansies* from *Viola lutea*, also a poor specimen of a seedling *Tropaeolum*.

A very pretty collection of the beautiful *Colens*, from Chiswick, was much admired. A specimen plant of *Aothurium Scherzerianum* from the gardens, was awarded a special certificate.

Messrs. Lee, Hammersmith, sent two specimens of their beautiful golden Oak, *Quercus Concordia*, and two double *Zonal Pelargoniums*, which had been exhibited before.

Mr. Green, gardener to W. W. Saunders, Esq., exhibited a small collection of *Orchids* and other plants, perhaps more curious than beautiful. A fine specimen of an *Acinetia*, supposed to be a new species, from New Grenada, was awarded a first-class certificate. Mr. Morgan, nurseryman, Torquay, sent *Colens* Morgani, not equal to many others. Mr. Harman sent three plants of a seedling hybrid Ivy-leaved *Pelargonium*, which it was requested should be sent to the Show next Saturday. Miss Maling, Woolston, Southampton, sent several flowers of her very beautiful *Pansies*, which must take a high position among the French *Pansies*, and become great favourites.

THE SCIENTIFIC COMMITTEE met to-day under the presidency of Mr. Wilson Saunders, F.R.S. A plant of *Lilium album*, from Mr. Earley, was laid before them, in which desiccation of the leaves in patches, not the result of burning, seemed to have ensued from some disease of the stem. The Rev. M. J. Berkeley observed that it was not caused by fungus of any kind. Some small Pears were submitted for examination, infested by minute grubs; every Pear on the tree seemed to be in the same state. These came from the garden of Mr. Webb, whose fruit trees have suffered much for several years from the same cause. The grub was the larva of a Dipterous insect, and it was referred to Professor Westwood for examination, with the view of identifying the species. Mr. Berkeley brought before the meeting several young branches of the *Apricot*, the leaves of which were marked by brown patches, succeeded by an outer yellow ring, which is more desiccated than the central dark patch, and which he considered was produced by the chilling effects of drops of water; he had witnessed the same effects on the *Portugal Laurel*. An *Elnge Nectarine* tree was similarly affected. Some paper had been sent to Mr. Berkeley with small dark dendritic spots, which had been supposed to be a fungus, and was figured by Lingby under the name of *Conferia dendritica*, and also in the "Fauna Danica" forty years ago. It was presumed to be crystallisation of the manganese used in the manufacture of the paper, as microscopic examination could detect no vegetable structure. Dr. J. H. Gilbert, F.R.S., undertook to examine

it chemically, in order to verify this conclusion. Dr. Masters read a communication from Mr. Van Houtte on the grafted *Abutilon Thompsonii*, which had been submitted for inspection at a former meeting of the Committee. In this example the leaves were variegated below as well as above the graft. Mr. Van Houtte states that when the graft was removed, the leaves subsequently formed below the graft became green, or that the variegated leaves returned to their normal green state. It was not clearly comprehended from his letter which was meant.

The progress of the growth of the Grapes now being experimented on at Chiswick was laid before the meeting. Mr. Wilson Saunders made some observations, accompanied by sketches, on the wild Pear and Apple trees found growing abundantly in the Weald of Kent; they extend over many hundred acres and seem to be quite wild, and many of them are fifty or sixty years old. He had noted three varieties. The first variety bears a yellow green freckled Pear, very juicy, but intensely astringent, the eye but little sunk, with short fruitstalk. The second, when ripe, is sweet, rough, and astringent, and the shape entirely altered, and altogether different from the first. The third is of a uniform greenish yellow colour, and of excellent flavour when stewed. There were no orchards near from which these trees could have originated. Mr. Berkeley thought the wood of these trees was more used for furniture formerly, and he had seen an excellent table in the possession of his father made from the Service tree, and he was inclined to view these trees as being a natural improvement on the Crab. Mr. Saunders brought a *Cucumber* with a leaf growing out of the side. There was a distinct ridge continued from the footstalk to the leaf, along one side of the *Cucumber*.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. On this occasion fourteen new Fellows were elected, and after the routine business, the Rev. M. J. Berkeley, in addressing the meeting, remarked with reference to the large Mushroom sent by Mr. Barnard, that *Agaricus arvensis* sometimes attains double the size of the specimen exhibited, but that when of so bright a yellow it did not seem to be particularly wholesome. Formerly the species was not much eaten in this country, but on going through Covent Garden several times lately he had found it almost the only kind outside, whilst in the central arcade the Mushrooms were the true bed Mushroom. With regard to the specimens of Potato referred to in the Fruit Committee report, it had been this year very general that Potatoes had either thrown up no green shoot at all, or only a very small one, probably owing to the starch being too firmly set in the cells of the tuber from over-ripening, hence the production of small tubers from the original one. This, however, was only a supposition which he had hazarded. Some specimens of diseased Peach and Nectarine shoots from Mr. Woodford, the gardener at Eastwell Park, who had sent others on two former occasions, were then noticed, and Mr. Berkeley remarked he had seen the same, or a very similar disease, in a large house where one particular tree beneath an aperture for ventilation was always affected, but none of the other trees in the house, and both he and the gardener came to the conclusion that there was the cause. Mr. Berkeley then read a communication relative to the cultivation of Maize, which is to appear in the Society's Journal, and recommended those who were desirous to experiment with it in this country, to raise the plants in a frame and plant them out.

Mr. Berkeley, referring to the variegated Maple shown by Messrs. Standish at a previous meeting, said he had compared it with the specimens of Siebold and Zuccarini at Kew, and found it was not *Acer japonicum*, but a variety of another species. He then announced that Lady Dorothy Nevill had, with her accustomed liberality, offered a second prize for *Narcissus*. Among the *Rhododendrons* from Mr. Lloyd Wynne, of Coed Coch, was a specimen of *R. Falconeri*, grown in the open air. *Rhododendrons* were stated to flourish there on the slate formation; but three miles off, on the mountain limestone, it was hardly possible to get them to grow. Mr. Standish informed him he had tried to hybridise other *Rhododendrons* with *R. Falconeri*, but without success, and the reason appeared to be that the pollen tubes are too large to penetrate to the ovules of the kinds used as female parents. He might also mention that totally different results had been obtained by using pollen from short stamens, as compared with that from long stamens, and he believed the same thing had been observed with *Pelargoniums*. Mr. Berkeley next pointed out the golden-leaved Oak, from Messrs. Lee, as likely to prove a great acquisition, especially for mixing with dark foliage; also a peculiar condition in a *Hydrangea*, in the leaves of which there was a layer of white cells overlying the green ones.

Mr. Wilson Saunders asked the meeting to pass a vote of thanks to Mr. Bateman, for his liberality in presenting the Society with a large number of cool-house *Orchids*, for stocking a new *Orchid* house at the western entrance.

Mr. Bateman, after returning thanks for the vote, which was carried by acclamation, expressed his confidence in the success which would attend these *Orchids* in the climate of London, so much more favourable than that of North Staffordshire, and paid a well-merited tribute to the skill with which Mr. Eyles manages these plants. Mr. Bateman next pointed out the most remarkable of the *Orchids* shown, and explained that there were fewer than usual, owing to Messrs. Veitch and others having contributed a number to the International Exhibition at St. Petersburg. In connection with this, Mr. Bateman took occasion

to refer to the loss which the Society and horticulturists had sustained in the death of Sir Wentworth Dilke.

Mr. Wilsou Saunders having been invited by Mr. Bateman to make some remarks on the Orchids which were exhibited by his gardener, said that one of them with yellow flowers, though so insignificant in its appearance, had yet a charm of its own in being one of the sweetest-smelling plants he was acquainted with. The *Acineta* from New Grenada, which also came from his garden, though yellow-flowered at present, he believed to be merely a variety of *A. Humboldtii* without the spots, and though the flowers were yellow, these, he thought, would ultimately become of a dingy mahogany colour. He was pleased to see several plants of *Agave*; the *Agaves* were most noble plants, much grown on the Continent for pedestals, and there commanded very high prices. There were two under the name of *A. applanata*, but neither, he thought, was true. And here he must observe that an error is committed in considering plants to be of distinct species, because differing in their leaves. There are 120 or 130 *Agaves* considered to be distinct species, but a large number of them are probably mere varieties. Mere variation in the leaves ought not to constitute a species.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 19TH.

THE first great Show of this Society commenced to-day, and will be continued to-morrow (Thursday). It is indeed a most charming display, and quite as effective as any exhibition that has been held at the Regent's Park. Very many of the collections are the same as those seen at the Crystal Palace last Saturday, but their height as well as appearance seems greatly enhanced by the difference in the place of exhibition. The collections of stove and greenhouse plants from Messrs. Glendinning, Williams, and Jackson among nurserymen, and Messrs. Donald, Wilkie, Ward, Chapman, and Wheeler are excellent. Mr. Fairbairn, gardener to the Duke of Northumberland, Sion, contributes some fine-foliated plants, as *Alocasias* and *Anthurium acule*, especially worthy of notice. Heaths are well represented in collections from Messrs. Morse, Jackson, Williams, Rhodes, Ward, and Peed. Of *Azaleas* likewise there is a fine display, though on the whole the specimens are neither so large nor so densely covered with bloom as in previous years. Messrs. Glendinning, Williams, and Turner take the lead for these in the nurserymen's classes, and Mr. Wilkie and Mr. Chapman, gardener to J. Spede, Esq., Hawkesyard Park, among amateurs.

Of *Roses* there is a beautiful bank furnished by Mr. Turner, Mr. William Paul, and Messrs. Paul & Son. Mr. W. Paul also sends an admirably-bloomed collection.

Pelargoniums, both Show and Fancy, are excellent. Mr. Ward, who shows the best nine of the former, has a splendid plant of *Rose Celestial*, 4 feet in diameter; *Caractacus*, from the same exhibitor, is also very fine. Mr. Windsor, gardener to J. Ravenhill, Esq., shows the next best collection. Of *Fancy* kinds, Mr. Windsor and Mr. Donald have both admirably-grown plants.

Orchids are not numerous, and most of them are the same as those shown at the Crystal Palace. Mr. Peed, Mr. Young, Mr. Eckford, Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, and Mr. Ward, are the leading prizetakers; Mr. Williams and Mr. Bull being first and second in the nurserymen's class for six.

Messrs. Veitch and Mr. Bull each contribute large groups of new and rare plants; and Mr. Turner, Messrs. Downie & Co., Messrs. Carter & Co., send new *Pelargoniums* of various sections, and other plants. Mr. Ware, of Hale Farm Nurseries, Tottenham, has a beautiful semicircle of *Alpine* plants, most tastefully arranged on one of the sloping banks in the tent. Some *Lycopods* from Mr. Parsons, gardener to R. Attenborough, Esq., of Acton (green, are also well worthy of notice.

Unfortunately, a heavy storm of thunder and hail came on just before the Show was opened, but it is to be hoped that the weather on the second day will be such as to encourage that large attendance of visitors which the Exhibition so well deserves.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

AZALEA LINEARIFOLIA (Slender-leaved *Azalea*). *Nat. Ord.*, Ericaceæ. *Linn.*, Pentandria Monogynia.—Native of Japan; introduced by Mr. Standish, Royal Ascot Nursery. Flowers purplish rose.—(*Bot. Mag.*, t. 5769.)

CROTALARIA CUNNINGHAMII (Allan Cunningham's *Crotalaria*). *Nat. Ord.*, Leguminosæ. *Linn.*, Diadelphia Decandria.—Native of the dry regions and almost barren sandy ridges of Central Australia. Flowers yellowish green.—(*Ibid.*, t. 5770.)

ERANTHEMUM ANDERSONI (Dr. Anderson's *Eranthemum*). *Nat. Ord.*, Acanthaceæ. *Linn.*, Diandria Monogynia.—A beautiful half-shrubby stove plant, native of India. Flowers white, lower lobe spotted with purple.—(*Ibid.*, t. 5771.)

CALCEOLARIA HENRICI (Mr. Anderson-Henry's *Calceolaria*). *Nat. Ord.*, Scrophulariaceæ. *Linn.*, Diandria Monogynia.—

Native of the Andes of Cuenca. Flowers yellow.—(*Ibid.*, t. 5772.)

IRIS STYLOSIA (Long-styled *Iris*). *Nat. Ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Native of Algiers, Corfu, and Morea. Flowers fragrant, pale purple, banded with pale yellow, and streaked with dark purple.—(*Ibid.*, t. 5773.)

CORDIA GLABRA (Smooth-leaved *Cordia*). *Nat. Ord.*, Boraginaceæ. *Linn.*, Pentandria Monogynia.—A handsome Brazilian stove shrub. Flowers snowy white.—(*Ibid.*, t. 5774.)

NEW HARDY AZALEAS.—“Hardy *Azaleas* are amongst the sweetest and most brilliant of the flowering American shrubs which render our garden scenes so enchanting in the merry month of May. Forty years ago the original species and their immediate progeny, might be seen yielding their masses of golden and fiery and roseate hue, to lighten the dark masses of evergreen *Rhododendrons*, with which, then as now, they were commonly associated. After that the Continental cultivators took up the improvement of the *Azalea*, and the Ghent varieties of some twenty years since revived for a while its popularity; but with the onward march of fashion it seems to have been again left in the rear, and for the most part unheeded by the masses, though not uncared for by those who knew its worth. Hence we were not surprised, some two or three years since, on visiting the Knaphill Nurseries, one of the earlier and still one of the most pleasant homes of ‘American plants,’ to find that the breeding of improved *Azaleas* had been for some time going on quietly, and that, as a result, a number of novelties of sterling merit had been obtained.

“These grand acquisitions, which occur in considerable variety of colouring, are, as we understand, partly the result of a judicious intermixture of *sinensis* blood, and partly the result of selection and of seeding on from the best varieties. Not only the quality of the flowers but the habit of the plant has been cared for, and in this way have been secured varieties which combine with larger, more brilliant, and better-shaped flowers, a vigour of growth which enables them to develop their blossoms freely. The new sorts have this further recommendation, that instead of blooming early, and having in great measure faded before their associates the *Rhododendrons* come into flower, they bloom contemporaneously with the latter, and it need scarcely be pointed out that their brilliant tints, of orange and red especially, are particularly valuable from the fine contrast they present with the colours familiar amongst *Rhododendrons*. Their early-blooming habit was in fact one of the chief drawbacks of the primitive *Azaleas* of our boyhood, and this is now in great measure removed by the introduction of Mr. Waterer's new varieties.

“We may also mention that in the same collection are some wonderfully fine double-flowered varieties. One which we particularly noticed, an exquisite shaded orange, was much brighter and more attractive than the well-known *Van Houttei*.

“*Nancy Waterer* is a charming variety of vigorous growth, producing contemporaneously with its leaves, fine trusses of deep orange-yellow flowers, which are larger and richer-coloured than in any yellow previously obtained, the colouring being most intense in the three upper segments. In this, the flowers are fully 2 inches across, and sweet-scented. *Bessie Holdaway* is a lovely flower, sweet as violets, but scarcely so large as the foregoing, the flowers being about 1½ inch broad, and of a clear, lively rose colour, the upper segment being freely spotted with bright orange.”—(*Florist and Pomologist*, 3 s. ii. 97.)

THE PORTABLE ORCHARD.

(Continued from page 311.)

In the third season we shall have a new feature to deal with, for all the eyes on both leader and branches will be inclined to push, and only the terminal buds must be suffered to grow to any length. This calls for more attention during the summer growth than has heretofore been required. The eyes that are to produce the new elongations must point outwards, in order that the branches may tend further from the central leader. Now, if you have but few trees, and wish to be very careful, you must cut back to the bud above that which is to produce the extension; and when this extra bud has made half a dozen leaves you must pinch off the end of its shoot. This will cause the next eye to push very vigorously, and when a swelling shows itself at the junction of this shoot with its branch, then you must cut off the extra shoot and the piece of the branch on which it is growing, leaving no snag. The terminal shoots are sure to grow vigorously, and they are the only shoots that are to be permitted to

grow beyond six leaves; all the rest, as soon as they have made six leaves, must have their points and the two end leaves pinched off, so as to leave four full-grown leaves on each; this will require to be done in June or early in July. The terminal shoots of the leader and six branches must be treated exactly as in the previous season; and if any of the new laterals that have been pinched push again, pinch their shoots down to two leaves as soon as they have made four new ones. If they push again, pinch them to one leaf.

In the following spring we have merely to repeat this process of cutting-back the leader and the extensions of the six branches, removing about one-third of the new growth, and, in addition, the pinched laterals must be cut back to three eyes, and if we are contented to confine the tree to this very simple form of one central leader and six side branches, nothing more is needed than the annual repetition of the work already described, the result being such a tree as *fig. 22*.



Fig. 22.—Pyramidal Pear tree at the end of the fourth year, showing the points to which it has been cut back in successive springs, and also the formation of the fruit spurs.

Hitherto I have tried to explain this process synthetically, according to philosophers' terms, and I shall now try the analytic method, which consists in taking to pieces instead of building up. The tree I have been dealing with is not an imaginary one, but a portrait of one in my orchard, about $4\frac{1}{2}$ feet high, and coming into blossom for the first time. The drawing of it has been made just as its buds are on the point of bursting; the branches are bent a little more than they are in reality, but I am not sorry for this, as it marks most clearly the successive years' growth.

Fig. 22, then, represents the tree at the beginning of the fifth year, or, excepting the state of the buds, the form it would have at the end of the fourth year.

All the points marked *d* are those to which the central leader and six branches were cut back last season, or rather I should say, to which five of the six branches were cut back, for it will be seen that one of them has met with an accident the year before, and it was, consequently, allowed to grow on in order to recover its place, and it may also be seen that the snag which is the remnant of its proper extension has not yet been cut off; it

is on the *c* line on the right hand side and next the leader. A few laterals are observed also on the last year's extensions, just as they have been left by the pinching-back last summer; these must now be cut in to three eyes. The ends of the branches were pinched off at the end of August, and have not broken again; and as the buds are well ripened and developed all the way down, I shall not cut them at all shorter, and unless some of them outgrow the rest, they will not require shortening for years to come. The annual lifting the tree in the autumn now prevents too vigorous growth, and by turning the tree, or by inclining it slightly, we can always give the advantage of southern aspect and more upright direction to any weak member of the family, and so preserve the balance with very little application of the knife.

On the *c* line are the marks of the cutting-back of the preceding year—that is, *fig. 22*, before these cuts were made, was *fig. 21* (see page 311), as that in its turn was the year before *fig. 20*. This little tree has had no check from removal; had it required potting, the growth would not have been so vigorous and regular. A potted stock does not furnish such vigorous shoots the year it is grafted as one in the open ground; but I think the absence of violent check afterwards fully compensates for this want of early vigour. When the tree is worked on a stock in the open ground, it should not be disturbed till it has acquired as much development as in *fig. 21*; it should then be potted at the end of September, and plunged for a month or six weeks in a heap of decaying leaves or manure, and then be pilled for the winter.

It will be readily seen that this tree could easily have been formed into a goblet or wine-glass shape by cutting out clean the central shoot from *fig. 21*; but it would have been better to have stopped this shoot seven or eight buds lower down, and when it broke again to have pinched the elongation to a single leaf. You may train to this form by suppressing the central leader entirely; but in that case the shoot from the uppermost eye left in *fig. 20* must be tied to a stick to keep it in its proper position, and it will be inclined to grow too vigorously for the other branches, so the simplest way after all is to allow the central leader to grow at first, and then stop it, and in the following spring to remove it.

The umbrella form is obtained by allowing the *A* shoot of *fig. 20* to grow for two years, taking care that no laterals extend themselves, rubbing out early in the spring all the eyes on the lower two-thirds of the stems. In this way a clean stem of any height may be obtained; but usually in two years one 4 or 5 feet high will be produced. The top should be pinched off at somewhat more than the desired height at the end of August, to ripen the wood, and in the spring following the top must be cut off at the correct height, and all the buds but the uppermost six or seven must be rubbed off. In this way we shall obtain just such a growth as *fig. 21*, only the stem will be 4 or 5 feet high instead of as many inches. In the following season the central leader must be cut closely off, and the branches depressed by tying them to a hoop or wire ring. The hoop may be secured by strings and pegs to the proper height from the ground, and the branches bent down to it, so as to stand horizontally the first season. In following years the extensions are to be carried further down till the ribs are as long as desired. During this time the laterals must be pinched back to three or four leaves, as in the pyramid, the only difference being that the buds next the stem will in the goblet form be inclined to make too strong laterals, and we have no need for pruning-back to secure their development. At first sight this seems to give an advantage to this form over the other; but, in fact, it is not a good one, for the flow of sap to the extremities is not strong enough, and I only mention it as a desirable form where a variety is wished for.

The three forms now described may be varied by allowing the six branches to fork each time they are cut back—that is, the portions of them between *c* and *d*, *fig. 22*, would have been composed of two extensions each, by permitting two eyes to grow without stopping; and so again the next season, each of these two extensions is to be allowed to form two new ones, the object of this continual bifurcation being to fill up the spaces more closely as the branches recede further from the stem. In the case of large trees this is often an improvement; but in our potted trees it is rarely of service, for it is better to keep the branches tolerably close and upright from the very first; six or seven strong branches can carry a heavy crop of fruit, and are more easily managed than twice or four times the number. The open form is the great advantage these regularly-trained trees possess over the irregular forms; sun and air have free access to every leaf and fruit, and this is the main object of

giving definite form to the tree. In France this system of bifurcation is carried to a wonderful degree of neatness, the branches being trained to cross each other regularly, and by being grafted together, or inarched (of which a few words hereafter), at the points of crossing, very firm baskets are made; but we English are too fond of practical results to sacrifice the fruit for the basket, however pretty it may be, and I fear these very artificial forms are not productive; I have endeavoured, therefore, to give as models those forms which are at once graceful, easily grown, and productive in the highest degree.—
W. KINGSLEY.

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE late rains have been favourable for transplanting. Make good failures in the early-planted crops. *Asparagus* beds will be greatly benefited by liberal waterings with manure water from the stable or farmyard, especially if the plants are weak. *Endive*, let a sowing be made directly. *Cauliflower*, sow for late use. *Peas*, put in a good breadth of Knight's Dwarf Green Marrow or some other suitable variety for late crops. Situation has doubtless much to do with the proper selection of a variety for late bearing, but we have found nothing among the many new varieties which we have tried equal to this for resisting the attacks of mildew, and very few surpass it in quality. The rows should be prepared after the manner of Celery drills, and the manure completely saturated with water. *Kidney Beans*, let full crops be planted forthwith, and plant out those that have been raised under glass. *Spinach*, attend to keeping up a regular succession. *Turnips*, scatter a little of the Early Dutch on a cool border, neither digging nor using manure. It is a mistaken notion to persist in digging ground for these in kitchen gardens so full of old manures, the Turnip being naturally too gross there under any circumstances. Always choose the hardest and poorest ground you can find, and merely hoe the seed in. By these means you will always obtain good Turnips. Nothing can exceed well-burned ashes of any vegetable refuse for the Turnip. *Tomatoes*, plant them out against the walls, also *Vegetable Marrows* and *Ridge Cucumbers* under the shelter of hand-glasses.

FRUIT GARDEN.

Strawberries in blossom must be well watered. Cover the rows with the old pit linings, chiefly half-rotten leaves, and water over this. Remove some of the watery wood from the Currant bushes, and thin Raspberry suckers. Where the Gooseberry trees are much infested with the caterpillar, if a quantity of Foxglove leaves can be procured and steeped in boiling water, and the water when cold strained through a cloth sieve, syringing with it will effectually destroy the pest; but the fruit must not be used until after the trees have been well washed with rain. Attend to regulating the growth of trees designed to be trained in any particular form, stopping useless shoots to throw more strength into those that are wanted.

FLOWER GARDEN.

It is now high time for bedding-out some of the mass flowers, at least such as are least liable to injury by frost, and have undergone a proper hardening process. Much may be done as to display by a judicious arrangement or combination of both colour and figure. As a general principle, our best authorities seem to agree that the various shades of orange and yellow will class well with the various purples and blues; whites are suitable with the blues, oranges, and reds. Whites, however, derange the effect of the yellows, as also the violet shades, whilst the various red or rose-coloured flowers are, as far as colour is concerned, capable of forming a bed by themselves. That the proper keeping of the garden may be as little interfered with as possible, through the litter and confusion consequent on "turning out," use every dispatch to complete the work. If, however, any portion of the stock is not sufficiently prepared, allow it to remain under glass as much longer as may be necessary, and plant out nothing but strong plants that have been carefully inured to the sun and air, for weakly, ill-prepared plants are so much at the mercy of the weather, that it is folly to depend upon their covering the ground in any reasonable time. Give sufficient water to settle the soil about the balls of the plants the first warm morning after planting, and give no more until the soil becomes dry, unless warm, drying weather should set in, and then a gentle sprinkling every morning will greatly benefit the plants.

GREENHOUSE AND CONSERVATORY.

As the time when plants are in bloom is the only interesting period of their growth to the majority of their admirers, it is always desirable to prolong it, and to allow them to be examined without subjecting visitors either to an over-heated or an over-moist atmosphere. For this purpose, where there is no conservatory, a suitable house could be appropriated for the more showy specimens when in flower, where the necessary shading to preserve them in perfection for as long a time as possible can be given without interfering with anything else. The want of such a structure is more generally felt in the garden of the country gentleman, where a variety of plants are scattered through the pineries, vinerias, and other houses, where their beauty is lost when in bloom, owing to the want of some separate house in which they can be seen to advantage. Of course, these remarks do not refer to regular plant houses, but even with these it will at some season be desirable to remove very showy plants to a house such as I have pointed out, rather than allow them to be subjected to treatment not always favourable for the preservation of their bloom. The plan is now adopted in some leading nurseries, and, doubtless, will soon become common, from the many advantages it presents; and the smallest gardens will possess their show house for displaying the stock of plants in flower. The construction of such houses may be more architectural and less dependent on aspect than houses constructed for the growth of plants only. For hardy plants to be potted and prepared for next season, the common Mandarin and Otaheitan Oranges can be strongly recommended, as valuable plants for forcing into bloom in the winter months. For this purpose, keep them rather under-potted, and pinch the young wood back, to form bushy, compact specimens. *Daphne indica* and *Daphne indica rubra*, are valuable as winter-flowering plants, as well as for their fragrance. The Chinese Azaleas which have been some time growing, should be kept in heat until they have set their buds, when they may be removed to the open air, as may the Oranges, when the shoots become firm. A stock of common and Anne Boleyn Pinks for forcing, as well as the perpetual-flowering tree Carnations, should likewise be brought forward, the latter are valuable acquisitions. In mixed greenhouses fires may now be nearly or entirely dispensed with, if the weather is genial, and accompanied with bright sunshine, heat sufficient for the night may be secured by shutting up early, not, however, soon enough to scorch. A general rule can scarcely be laid down in such cases to guide the inexperienced. On a sunny afternoon one half of the air may be reduced at three o'clock, and the whole excluded at four o'clock. Continue to attend to the various points of cultivation previously recommended, remembering that now is the period for rapid growth, and for affording it all the encouragement necessary.

STOVE.

As regards stove plants and Orchids, thorough cleanliness, free ventilation, plenty of atmospheric moisture, and occasionally a slight shading in very bright sunshine, are at present the chief requisites. No measures should be neglected to encourage the free growth of Orchids at this period in order to have their pseudobulbs firm, well fed, and well ripened, as early as possible. If among the plants there are any sickly or badly-rooted specimens, they should be frequently examined for red spider, otherwise they will become a nursery for that pest, and from them it will soon spread to adjoining plants.—
W. KEANE.

DOINGS OF THE LAST WEEK.

CONTINUED cleaning and hoeing, as previously mentioned, and made successional sowings of Peas, &c. We shall, however, this week confine ourselves to the

ORNAMENTAL DEPARTMENT.

Box Edgings.—We have been busy clipping and regulating these. If left as late as the middle or end of May, they will look tolerably well for the season, and will not be likely to be browned or blackened by the weather. Where great exactness is required, nothing is better than a good pair of hand shears. In circles, bends, and volutes, in ornamental edgings, more skill is required, but for straight lines, a garden line run along the centre enables the workman to cut the sides neatly and equally, and then the top can be cut square, which looks better than when it is wedge or conical-shaped. The greenness of the Box in all weathers is its chief recommendation.

Turfing.—Though the season was advanced we found it desirable to do a little piece, rendered necessary by other work

done. We do not think we shall be troubled with the turf, though we would have preferred to have laid it down earlier. We have turfed large spaces at midsummer, but with augmented trouble. The only security for having a good lawn from turfing now, and with little trouble afterwards, is to take up the turf much thicker than for autumn and winter work, and then, before laying it down, to soak it well in a tub of water. The extra work now will save labour afterwards. What we laid down in autumn and winter is not to be distinguished from old turf, and has only one fault, that of growing too freely.

Roses against walls and fences have had all the protection taken from them, in the shape of Laurel branches, &c. They are growing strongly, and showing well, and will succeed those in pots. The most forward of the latter are now set out of doors in a sheltered place, and will be repotted ere long, and grown in summer for early pruning and forcing.

Lawns.—The rains have given us additional trouble with mowing and machining, rolling, &c., and the Daisy knife has given us a green carpet, where there was nothing but Daisies to cut. Pretty Daisies, what a pity you are so common, or that you cannot be kept to the pastures and waysides!

In the flower garden we have been busy with digging and preparing, but the ground must be drier, more exposed to the action of the air, and warmer, before we turn out many bedding plants. We have done much work in the way of putting in order edgings of such plants as the Purple Oxalis, *Cineraria maritima*, Centaurea, white-leaved; yellow and white variegated Arabis, *Chrysanthemum Sensation*, Golden Feverfew, *Viola cornuta*, *Cerastium* of sorts, &c. Some of the Arabis are old plants neatly dressed; but, on the whole, though looking less at first, we prefer young plants. If the smallest pieces without roots be planted in a border a few inches apart in autumn, or before the shortest day, they will be well-rooted plants before April. To make sure, we generally treat a lot of *Cerastium* in the same way. There is less trouble with young rooted plants when turned out. Tops without roots make neat edgings, but then they require frequent watering, and we like our plants to be as independent of that as possible.

Violets.—The whole of these can be easily propagated by cuttings in a shady place, and more quickly if assisted with a hand-light. With a little protection in winter, nothing that we know yet beats the lilac Neapolitan Violet; a large fresh flower of that in winter is a treat, but the flowers must be obtained from under glass. We have planted some good plants under a wall, and have thought of trying some in a shady cool place, so that if they live they will flower much later. This season the Violets did not last so long in the spring as usual. We have taken up most of the plants, pulled them to pieces, and, leaving a nice root to each plant or patch, planted them out about 8 inches apart, in fresh sandy loam enriched with leaf mould, so as to lift with balls, and go under glass in the end of autumn. Until growing freely we shall keep a few branches among them just to give a flickering shade. To have them good it will be necessary to keep the plants clean by frequent surface-stirring, to guard against mildew in a dripping season with a dusting of lime and sulphur whenever the first sign of the evil appears; to guard against red spider, an enemy of an opposite kind, in dry sunny weather, by heavy syringings with soot water; and last, but not least, to allow not a single runner to grow, but concentrate all the strength in the crown of the plant. The Neapolitan in this respect is different from other Violets. Runners taken off early and struck under a hand-light, and then planted out and fresh runners prevented, will bloom next season; but after this time runners left on the plant are mere robbers, keeping the crowns from being properly ripened, thus lessening their flowering powers, whilst they will not produce flowers themselves.

The Russian single Violet is still the most useful, as it is so hardy, and during the winter, in moderate weather, rich gatherings can be obtained, and never more so than last season. In well-prepared enriched ground they will produce plentifully for two years. We have a fine piece, which we are inclined to leave for a third year, though it is too dense a carpet. To have them very fine, some should be planted every year, as the plants bloom pretty well the first winter and spring after planting, and very finely the second. We have planted several pieces afresh, so as to make sure; and, amongst other aspects, such as south of a hedge, to have them early, we have planted a row on the north side of a mass of Laurels, to try and have them late. When once a person gets a stock of these it is easy to plant rows and beds anywhere, as the only thing necessary is to take up a lump and tear it to pieces, making a good plant

wherever good roots can be obtained. When we plant a piece we put the roots in rows a foot apart, and nearly as far asunder in the rows. By the autumn they will nearly meet, and in the second season they will be a dense mass. All such Violets do best in a rich loamy soil. Where the soil approaches clay in its stiffness, some lime rubbish and road drift will be a great help to it. Where there is likely to be too much damp the ground should be drained, and lighter material mixed with the soil. In damp, heavy soils the Violet flourishes on rough banks; but if such banks be light loam, there will be no danger of the Violets suffering from damp, but they will not bloom so profusely as in a stiffer soil. In rather light soils, to secure very free blooming, we have beaten and hammered the soil about the roots, and given rather rich top-dressing.

The Czar Violet, though far from being so free in blooming, and though, from its more vigorous growth, it takes up more room, is a very desirable single kind, from the depth of the colour, the size of the flower, and the strength and length of its footstalks. From this latter quality it comes in well for bouquets, &c., as it can be used without sticking or wiring. The latter quality, length of stalk, is greatly added to when grown under glass. We have divided what we had of this in March the same way as we did the Russian Violet, and planted it in a bed of rich fresh soil, removing part of the garden soil on purpose; but as there were a number of shoots or runners without roots, we put them in sandy loam as cuttings under a hand-light. We potted also a lot of Neapolitan Violets in 6-inch pots, so that we may move them and give them a little bottom heat in autumn and winter, and we shall do the same with the Czar, not only to obtain some long-stalked flowers in winter, but because we thus hope to have the flowers more plentifully and less superfluous vigour in the plants when we give them the protection of glass.

Of double Violets, we know nothing equal to the double flat blue, and the more conical one, termed sometimes the tree Violet, though all are tree Violets if so grown. These blues in their way are as good as the Neapolitan, with their hardness to stand all weathers in their favour. To have them fine, they should never stand more than two seasons in the same ground. We pull ours to pieces just as we do the Russian, and generally plant, if in a bed, 12 inches by 7 or 12, according to the size of plant. Nothing will better repay one for a deeply-dug, rich, well-aired soil. We like, when we can, to add fresh loam, such as can be had from the mounds by the sides of the highways.

Of white Violets, we have been unfortunate with doubles. We have never had any much better than a dirty drab. A double clear white, equal to the Neapolitan or double blue in size, would be an acquisition. From want of it we have fallen back on the single white, found wild on many a hedgebank; it is often very pure white in colour, and becomes a little larger in cultivation. We have heard and read much of fine white, red, pink, and other varieties, but what has come in our way rather disappointed us; and we would be glad of the experience of others, not only telling us all about the colour but the profusion of blooming, as the latter quality ought to be essential.

Besides the Neapolitan Violets, all those we have named would be worth a glass sash placed over them in cold places in winter, because the sweetness of the Violet is chiefly grateful then, and the frost, if at all sharp, takes away all the odour from the blooms, though they look fresh. In default of glass much may be done with covering in severe weather; but here we must add that, be the covering mats or hurdles, it should be supported above the plants. We put some litter over a fine bed in frosty days, and thus obtained odoriferous flowers when cold, but the litter injured the plants a little. A few hoops, poles, or pots should be used to keep the covering from touching the plants. Keeping a number in pots under protection is also a good plan, as then the pot can be taken into the sitting-room. A good pot will long scent a room delightfully.

Propagating.—Our readers with little convenience should know that before the beginning of the month many things, as Lavender, Sage, Rosemary, Evergreen Candytufts, Alyssums, Wallflowers, Arabis, Cheiranthus, &c., can be propagated freely, by planting good-sized slips firmly in the ground. After this time they will do all the better under the protection of a hand-light, and smaller pieces can then be used, planting them firmly and thickly in sandy loam, and giving air more freely as the rooting proceeds. When Pansies of certain colours are wanted in great abundance, the pieces without roots may thus be protected, and will soon root. Large plants may be divided with roots, as the Violets we have spoken about. A few hand-lights will insure even now a fine stock of such plants as men-

tioned above, for making the garden gay in spring, and a similar convenience will be wanted shortly for Pinks, Mule Pinks, Cloves, &c. Where there are no hand-lights to spare, a piece of calico strained tightly makes a good substitute. For want of both, a shady place should be chosen, and a few boughs fastened round.

Tulips now want protecting and examining, Pinks and Carnations staking, and Anemones and Ranunculuses watering in dry weather. We have been busy pricking off tender and half-hardy annuals, and these are soon injured when left thickly in the seed pots. We shall have to continue to forward Perillae and Amaranthuses, and to harden them off, but for some years we have found it is better not to plant out these too soon. We had some difficulty in making a stock for Coleus beds, as our temperature was scarcely high enough in winter. Those plants potted off were scarcely growing fast enough for us, so we had them taken to a bed where they could have a good bottom heat. Most likely we shall pot again, and then harden them off before taking them to the open beds. Last season we did not take them out until the middle of June, and thus the foliage escaped the rusty look it used to have with us when planted earlier. As a rule, a damp season suits these best, but they did well with us, dry as it was. Much north of London, however, we would imagine that the success will depend chiefly on large plants and late planting. We shall try some others besides the brown one this season, and some will be grown as large plants for corridors, &c., in the mode which is practised by Mr. Cadger. After being fairly started this tribe likes rich compost, as the size and colour of the foliage will be much dependent on that, though in some cases the colours may not keep so true. Are our readers aware, that a leaf or part of a leaf inserted in bottom heat, will soon make a plant?

With such exceptions, most of our bedding plants are in the open air, but where they can be helped in an emergency, we shall not meddle with them as yet, before the ground is in better order. Those with light warm soils may act differently. We have been busy potting, and dividing Ferns, as these, and chiefly the Maiden-hair Ferns, are so much wanted for decoration.—R. F.

COVENT GARDEN MARKET.—MAY 19.

We have experienced a decline in the general business, which will prove only temporary, in consequence of the holidays. Prices are rather lower for most descriptions of produce in consequence of there being a fuller supply. Some common sorts of Cherries have been consigned from the south of France, and bring from 3s. to 4s. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons.....each	5	0	15	0
Apricots.....doz.	8	0	4	0	Nectarines.....doz.	24	0	36	0
Cherries.....lb.	3	0	4	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	21	0	36	0
Currants.....½ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	8	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs.....doz.	12	0	20	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	1	0	1	6	Strawberries.....oz.	0	6	1	0
Grapes,Hothouse.....lb.	10	0	12	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	3	0	6	0	Lettuce.....score	1	0	1	6
Beans, Kidney.....hd.	2	0	3	0	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,punnet	0	2	0	3
Broccoli.....bundle	1	0	2	0	Onions.....bushel	12	0	14	0
Brus.Sprouta ½ sieve	0	0	0	0	Parsley.....sieve	3	0	4	6
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	4	0	6	0
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....hundle	1	6	2	0	Radishes doz.bunches	1	6	0	0
Cucumbers.....each	0	6	1	6	Rhubarb.....hundle	0	4	0	6
Endive.....doz.	2	0	0	0	Shallots.....lb.	0	8	0	0
Fennel.....bunch	0	3	0	0	Spinach.....bushel	2	0	3	0
Garlic.....lb.	0	8	0	0	Tomatoes.....doz.	2	0	3	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	4	0	6
Horseradish.....bundle	3	0	5	0	Veget. Marrows.....doz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, W.—*Catalogue of Bedding and Soft-wooded Plants. New Plants, &c.*

F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Stove and Greenhouse Plants, Azaleas, Camellias, Orchids, Ferns, Soft-wooded Plants, &c.*

TO CORRESPONDENTS.

*• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

DROPS ON VINE LEAVES (*Know Not*).—They are merely dewdrops, deposited from the moist air of the house. The same was noticed fully at page 298 of the present volume.

ANTS (*L. H. R.*).—You may drive them away and benefit the plants in your greenhouse by daily sprinkling guano, or pouring gas ammoniacal liquor over the nests and haunts of the ants until they disappear.

MURA CAVENDISHII FRUIT RIPENING (*J. W. J.*).—The fruit ought to be cut when the first pips are ripe, which you will know by their change of colour and pulpiness. Then cut the bunch and hang it up in a greenhouse or fruit-room. The fruit will ripen perfectly, but we prefer them ripened on the plant, maintaining a good heat and dry atmosphere, accompanied with abundance of air.

PELAGONIUMS (*F. J.*).—All the Pelargoniums you name make good pot plants, and are desirable for the purpose—the ornamentation of the greenhouse in the late summer and autumn months. The Ivy-leaved are very suitable for baskets and for pots. Zonal Pelargoniums flower quite as well, indeed more freely, when they are plunged as when planted out in the bed, the pots being of good size. They ought to be in single or separate pots, and not three plants in 11 or 12-inch pots; the plants being further apart have a better opportunity for growing. Plants grown entirely for their foliage may have the flowers removed as they appear, taking them off close to the stem, and when the leaves become old and lose colour they may be taken off by hand close to the stem.

VEGETABLE MARROW BED (*A Constant Reader*).—The situation should be open to the sun, but protected from winds to the west, east, and north—in fact, the situation cannot be too sunny, nor too well sheltered from wind. The soil should be taken out 3 or 4 feet wide and 1 foot deep, filling the pit with hot dung, and raising it 1 foot or 18 inches above the surface, beating it well down and treading it firm. The soil taken out of the pit may be placed against the sides of the dung all round, and the bed covered with 8 or 10 inches of good, rich, rather light turfy loam. The plants may be planted when the heat has risen and warmed the soil, placing them 3 feet apart, and protecting them at night from frost by an inverted flower-pot, watering copiously and throughout the summer, in dry weather. If you sow the seeds you may put in two or three seeds at 3 feet intervals along the centre of the bed, placing a hand-glass over them, keeping close until the seedlings are up, then admit air freely, hardening off by degrees, thinning away the plants, leaving the best one only under each glass, and when that fills the glass remove the glass altogether, the plants being well hardened-off previously.

FUCHSIA GOING-OFF (*The New Gardener*).—We do not discern from the treatment given your plants what is the cause of their dying-back. The treatment seems to us all right; but you say the wood shrivelled last winter, and that the plants have had frequent doses of guano water. The former would cause them to die back, and they would not start into growth the following year, except from the live wood. The guano water, if too strong, would certainly destroy the roots, and that may be the cause of the plants dying-back after starting into new growth.

THORPELUM TRICOLORUM BLOOMS GOING-OFF (*Jackdaw*).—We think your plant had not a sufficiency of air and light, but it may be occasioned by a deficiency of water, or too much, and a likely cause is the dryness of the atmosphere. It is usual, however, for the plant to lose some of the buds even in greenhouses, and that from the plants or tubers not being potted until they have shoots several inches long. The plant not unfrequently seeds, and the seeds, when ripe should be sown in pots, placing them in the same position as the old plants, and keeping the soil moist. The soil most suitable is two parts fibrous sandy loam, one part sandy peat, with a free admixture of silver sand.

OTABIEE ORANGE (*Idem*).—It is, perhaps, the best of all Oranges for pot culture, being very profuse-blooming and fruiting, and succeeds in a room window. You could not raise plants from pips that would flower within several years in a window. Your best plan would be to purchase a small plant, which may be had through any of the principal nursery-men.

FUCHSIA FULGENS NOT FLOWERING (*Idem*).—We should take up one of the plants as you propose and pot it in sandy fibrous loam, providing good drainage, keeping the plant well supplied with water in dry weather, never allowing it to flag. It should have an open sunny situation. Your soil is probably too rich; the remedy will be to take the plants up, pot them in lighter and poorer soil, and plunge the pots, covering them over the rim.

ARDISIA TREATMENT (*C. L. W.*).—It should have the warmest position the greenhouse affords, light and airy, keeping the soil rather dry in winter, but not so much so as to cause the foliage to wither or the fruit to fall prematurely, for the flowers are its chief attraction. A compost of two parts light turfy loam, and one part sandy peat or leaf mould, with a free admixture of silver or sharp sand will grow it well, good drainage being provided. The plants being low in the pots we should now turn them out and repot with the hills entire into larger, not giving a large shift, but one large enough to admit of a little soil being placed between the pot and ball. The plants should be raised in the pots, the crown of

the roots not more than half an inch below the rim. Water freely when growing, but avoid making the soil sodden.

PEAR TREES ROOT-PRUNED (*A Ten-years Subscriber*).—The trees had not, we fear, been taken up or transplanted for many years, and in lifting them last autumn too many of the fibres have been destroyed. You will not gain anything by cutting the trees back; but we advise their being left as they are, sprinkling them overhead every morning during this month, but not making the soil too wet, nevertheless keeping it moist, should dry weather set in, by copious waterings, and after this month syringe the trees in the evenings of hot days, stopping the shoots at the fifth or sixth leaf. The insect that folds itself up in the leaves is some caterpillar, for which no remedy is equal to hand-picking, which, though a tedious, is a certain mode of riddance. We advise the same for the wall fruit trees.

PLANTS FOR STONE BOXES (*Idem*).—We do not know of any plants so suitable as Ivies, you evidently requiring trailing or climbing plants. The plant spoken of as being used for screens in Russia is said to have the appellation of German Ivy, referred to *Ipomoea hederacifolia*, but no one appears to give any clear account of it, nor to grow it. The Everlasting from the Cape is probably one of the *Aphelaxes*, but which we could not say without a specimen. *Aphelaxis macrantha purpurea* is one of the best.

PINCHING TERMINAL SHOOTS OF FRUIT TREES (*Amateur*).—Your trees, we presume, are wall or espalier; the terminal shoot or extension of each branch should not be shortened either in the summer or winter pruning, but be trained in the full length; but if you desire to multiply the leaders, then the leaders must be shortened at the winter pruning, and down to where you wish to originate another shoot or branch. When not wanted for extension the terminal shoots should be pinched back like the other shoots, and be shortened in winter as required. We, in general, pinch them at the sixth leaf for the terminal shoot, keeping closely stopped throughout the summer, and prune in autumn immediately after the leaves have fallen, to one-third their length if strong, half if moderately vigorous, or shorter than two-thirds if weak, cutting the laterals in to within half an inch of their base.

ASPARAGUS (*Idem*).—The plants two years old from seed should not be cut down this or any other season, but allowed to grow throughout the summer without stopping, watering freely in dry weather with liquid manure up to the end of August. The stronger the haulm or stalk this year the finer will be the heads next, and they ought not to be cut down until they become yellow and are dead. The plants from which you are cutting may have all the heads or young shoots cut until the end of this month, and then you should encourage two or three to grow from each plant, not cutting any after the middle of June, going over them at the beginning of July, and thinning out the shoots, taking away the weak, and leaving three or four of the strongest shoots to each plant.

STANDARD FIG TREE (*Idem*).—The shoots may be stopped at the fifth leaf, and again if they make more than three leaves after the first stopping, taking out their points the second time at the third leaf. The shoots may now be thinned out; and in doing so remove the old, long, straggling, bare branches, shortening back the long and straggling, and in such a manner as to produce a compact head.

PLANTING FLOWER BEDS (*J. Hush*).—Under no circumstances do we undertake to plant flower beds; we can only criticize planting that is proposed.

VENTILATING A VINERY (*H. H.*).—For a vinery with large squares of glass and a lean-to, with the rafters—say, from 14 to 16 feet wide, the ventilation ought to be 1 foot broad top and bottom. If your ventilators are much less than that you can easily increase the amount of ventilation by having some squares at the top moveable. For a temporary shade in a very bright day, whitened water would answer for a short time, throwing it on with a syringe, using, say, the size of a walnut of whitening bruised fine, and mixed with three gallons of water. For a permanent and thicker shade the same whitening in two gallons of milk would give a thin uniform shading. Heavy shading will not suit Vines. Give air early, and you will have no burning.

VINE LEAVES BROWN-SPOTTED (*A. B.*).—On the Vine leaf sent were a number of small warts, generally the result of a too-confined moist atmosphere. There were also brown blotches, the result of scalding, partly from the same cause, and not giving air early enough to dry the foliage before the sun struck upon the house. The marks on the little berries we would attribute partly to the same cause, unless you have been using sulphur on the heating medium, and had that rather hot at night when the ventilators were shut. When sulphur is used when the berries are so small, it is well to have a little air at top.

CLEANING A FLUE (*J. T. S.*).—The best plan of cleaning your flue will be to have an iron plate in a frame put in at the necessary places, and then there is no need to displace or pull the flue about. When we used such plates we had them put flush with the flue inside, and after cleaning daubed the iron over with a little mortar and put a tile or slate against it, and thus no smoke could escape. The effectiveness of a flue depends much on the frequent cleaning.

CUCUMBER PLANTS FROM SEEDS OR CUTTINGS (*May*).—Cucumber plants raised from cuttings will bear more quickly and more profusely than plants raised from seed, but they will not be quite so vigorous, nor continue so long in bearing. In reference to the Cucumber disease, as proving so far its inscrutable character we may mention, that in addition to seeds from great distances, cuttings from perfectly healthy plants were struck, and they too became diseased in the place where for the time being the disease was prevalent.

VERBENA VENOSA IN A SHOT BED (*R. S. H.*).—In a shot bed *Verbena venosa* will do about 14 inches apart; in a bed by itself about 7 inches apart. Seedlings raised in heat will bloom well the same year but late; not so early as those saved over the winter.

PLANTING FLOWER BEDS (*Idem*).—No. 1 will look well if the Beet pleases you in such a place; we would rather have Mangles's Variegated *Pelargonium* and *Verbena* in bands, and dispense with the Beet, it so reminds one of the salad-bowl. 2. We do not think that *Stachys lanata* is a suitable edging for Golden Chain *Pelargonium* shot with *Verbena venosa*, nor unless your *Pelargoniums* are strong will they be able to hold their own with the *Verbena*. What would you say to centre with *Verbena*, then belt with Golden Chain, surround with blue *Lobelia*, and edge with *Cerastium*? The same remark applies to the companion bed 3.

Perrilla will not be easily kept down as an edging to Mrs. Pollock, but centre with it and treat much as for 2. As regards Nos. 4 and 5, if your *Tsgetes* is yellow, it will not edge well with white *Petunia*, purple would do better. 6, 7, 8, 9, will do very well. As to the four beds round No. 3, we would cross-pair 10 and 12, edging them with *Lobelia*, and then 13 and 11 would pair, edging Golden Chain. The other group would look best if treated in the same way, or even as you have arranged, but cross-pairing, planting much the same 15 and 17, and 14 and 16. We have no doubt the garden will look well, and all the more from its roominess and breadth of lawn.

WATERING OUT-OF-DOOR PLANTS (*G. H.*).—The time of watering out of doors depends very much on the weather. As long as the weather is chilly it is best to water in the morning or forenoon; when the weather is warm and the soil warm it is best to water in the afternoon or evening. We disapprove of cold pump water at any time when it can be avoided. The evil of pouring cold water on a warm soil in the afternoon, is less than pouring it on a cold soil in the morning as you propose to do. The very heat of the soil will partly heat the moisture before it reaches the roots, whilst pouring cold water on cold soil in the morning will only make the soil colder about the roots, until the excess has gone off by rapid evaporation. In the early part of the year two simple things are great promoters of success—first, have the water soft and well aired; and secondly, give such water to the roots without drenching the surface soil. When it can be done, the best plan is to remove the soil in a little mound, water, and when it sinks to the roots replace with the dry soil. This secures moisture to the roots, prevents that moisture easily evaporating, and what is of as much consequence, prevents the chill which is ever the result of rapid evaporation. One reason why watering in a dull day is much more effectual than in a bright day, is the feeble evaporation then going on. From the middle or end of June up to the end of September, we would water in the afternoon when we could, but when you depend on a horse and cart, you must take the use of it when you can.

MELON CULTURE (*E. L. O.*).—Melon plants require stopping the same as Cucumbers; but they should not be stopped in their young state except to fill the frame with leading shoots 9 to 12 inches apart, which should be trained direct towards the side of the frame, and have their points pinched out when 6 inches from it. On the secondary or side shoots the fruit will show, they should have their points pinched off one or two joints above the fruit, and when the fruit is set and swelling keep closely pinched-in, thinning-out the barren shoots where too thick, leaving, however, a goodly number of shoots, and especially large leaves, healthy foliage being necessary for the swelling and perfection of the fruit. Two and not more than three fruits should be left on each plant. The fruit from setting—i.e., commencing to swell, will be ripe in about fifty days in your average temperature of 65°; the time varying a little with the variety cultivated and the variation in solar heat.

GREENS THROUGHOUT THE YEAR (*Deconiensis*).—Your could not with four kinds secure a supply throughout the year, but you may sow in March Brussels Sprouts, and they will be fit for use in October, and continue so up to March. Thus one-half of the year is supplied by them; but do you not like change? If so, sow in March or April Early Ulm Savoy, and the produce will be in early in autumn, and Drumhead Savoy or Green Curled Savoy, which is more hardy, will follow and be excellent after frost. The seed should be sown in March or April, and at the same time Asparagus Broccoli, or Cottager's Kale, to give sprouts in late winter and early spring. At the beginning of July sow Early Barnes Cabbage to afford a supply in April onwards, following in August with a sowing of Spotted, and these two will give you heads or sprouts until the Early Ulm Savoy and Brussels Sprouts are fit for table.

JASMINE GRANDIFLORUM FLOWERS NOT EXPANDING (*Idem*).—The cause we cannot determine without some data to direct us, which you do not furnish. Being in a pot will not cause the flowers not to open; but the plant is best grown in a border, and the shoots so trained that they have free ventilation, and are not further from the glass than 12 inches. Jasmies succeed in a compost of two parts fibrous loam, one part sandy peat or well-reduced leaf mould, with a free admixture of sharp sand, and good drainage. *Passifloras* and *Tacsonias* thrive in the same compost as stated for the Jasmies. They may be grown well in pots, and equally well in borders, and for large plants the latter are preferable.

TACSONIA VAN-VOLEMI NOT FLOWERING (*Amateur*).—It is probably too liberally furnished with root room, for it does not flower nearly so freely in a border where it has unlimited root space as in one that keeps the roots rather confined, but yet admits of a good growth. It is owing, we think, to that or some stimulant to excessive growth, which will, no doubt, be overcome this year. Six inches would not be too near to train it to the glass.

SUBSTITUTE FOR RAIN WATER (*A. B. C.*).—The best substitute for rain water is that of a pond, or stream, and failing that, spring water placed in a large and shallow vessel or cistern, and open to the atmosphere, always keeping it replenished and exposed for a few days before using it for watering purposes.

SPRING-FLOWERING PLANTS (*S. G.*).—*Anemone apennina*, blue; and *A. nemorosa flore-pleno*, white, division of the roots or offsets when the foliage fades, or when recommending growth. *Arabis alba*, white; *A. alpina variegata argentea*, and *A. alpina variegata aurea*, both with white flowers; cuttings, or parting the plants into as many parts as there are growing points, inserting them in sandy soil in a shady situation, best done in early summer after the blooming is over. *Anthriscus Campbellii*, *A. graeca*, and *A. grandifolia*, all blue or lilac purple, propagation same as *Arabis*. *Bellis aculeifolia*, red, leaves very pretty, division in early spring or summer after blooming, in a shady situation and moist. The double red, white, and pink *Daisies* are all useful. *Cheiranthus Marshallii*, yellow; cuttings or slips put in in summer in a shady border in sandy soil, shading and watering until rooted. *Cheiranthus* or Wall-flower, double black, red, and yellow; from cuttings or slips as above. *Cerastium tomentosum*, white flowers and foliage, slips or division in early autumn; for blooming, the plants should be put out in autumn strong, propagating from cuttings early in summer. *Gentiana acaulis* and *G. verna*, both blue; division in summer. June, in a shady situation. *Hebeborus niger*, white; division when the foliage turns yellow. *Hepatica triloba*, red, and *H. triloba*, blue, and var. double red and blue; division of the crowns in autumn before they begin to grow. The *Hepatica* and *Hebeborus* may not suit you, as they flower before March, and will not continue until the end of May. *Myosotis arvensis*, blue, and a white variety; seed sown in June in sandy soil; *M. palustris*, blue, division of the

plant or root in spring. Pansy, Cliveden, blue, yellow, white, and purple; cuttings from May to September in a shady border. Polyanthus in variety; seed, in May or June in a shady border. Primroses, double white, lilac, yellow, purple, and singles of the same shades of colour; division of the roots early in autumn, or in summer after blooming, in a shady, moist border. You will find full instructions for the cultivation of spring-flowering plants in "Spring and Winter Flower Gardening," which may be had post free from our office for 2s. 8d.

PRIMULAS TO FLOWER FROM MARCH TO MAY (*Idem*).—You do not say whether it is the Chinese or the common Primrose that you wish to sow the seed of. If the former, it should be sown in a gentle heat in July, and grown on a shelf in an airy greenhouse. If the hardy sorts, sow now or next month in the open ground.

ROSES FOR SOUTH WALL (*Idem*).—For a south wall we do not recom-

mend any but the Noisettes or Tea-scented Roses, and advise of Noisette —Céline Forestier, Lamarque, Ophiré, Solfatera, and Madame Maasot; and of the Tea-scented, Climbing *Devoniensis*, Gloire de Dijon, Mar-chal Niel, Niphetos, Socrates, and Devonicans.

INDEXES (*Combe Down*).—Our volumes commence the first Thursdays of January and July, and the index is issued as soon as possible after the conclusion of each volume.

NAMES OF PLANTS (*G. R.*).—*Ceanothus thyrsiflorus*. (*W. H. S.*).—It is only the common double-blossomed Polyanthus. (*D. G.*).—We cannot name plants from their leaves only. (*Ignorant*).—2, *Acacia armata*; 3, *Pyrethrum Golden Feather*; 4, *Paragonium Lady Plymouth*. (*J. Seger*).—1, *Lychnis dioica* (red-flowered variety); 2, *Saxifraga crassifolia*. (*B. C.*).—*Tamarix gallica*. (*Pater*).—A very pretty variety of *Athyrium Filix-femina*. We cannot say whether or not it is a named variety, or if rare.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 18th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 12	30.123	29.681	63	31	54	51	N.	.00	Clear and fine; very fine; densely overcast, cloudy.
Thurs. 13	30.173	30.147	62	39	54	51	N.E.	.00	Very fine, cold wind; clear and very fine; clear.
Fri... 14	30.071	29.932	58	42	53	50	E.	.00	Overcast; densely overcast; cloudy and cold.
Sat... 15	29.846	29.745	63	44	53	50	E.	.00	Clear, cold wind; overcast; densely overcast.
Sun... 16	29.695	29.642	55	46	54	50	E.	.02	Slight rain; densely overcast; densely overcast.
Mon... 17	29.594	29.538	66	40	53	50	S.E.	.00	Densely overcast; foggy and overcast; clear, starlight.
Tues.. 18	29.487	29.384	62	45	53	50	S.	.16	Slight rain; showery; cloudy, slight rain.
Mean	29.855	29.767	61.29	41.00	53.43	50.29	...	0.18	

POULTRY, BEE, AND PIGEON CHRONICLE.

HULL POULTRY SHOW.

THIS Show, held on the 12th and 13th inst., was a great success, the weather being favourable, and the collection of specimens such as is rarely met with. The Rifle Drill Hall afforded a most convenient space for the Exhibition, and the light and ventilation were excellent.

In *Game* fowls there was a great rivalry, though Messrs. Julian and Boyes, with birds in the very highest condition, monopolised the majority of the prizes. The Brown Reds were of especial excellence. In a *Spanish* class consisting of eighteen entries, very rarely indeed can so good a display be met with. Mr. Beldon secured the silver cup, but not without being closely pressed by many first-rate pens. It was unquestionably the best class of *Spanish* ever exhibited so far north. The *Dorkings* were excellent, and among them were several pens of particularly good Silver-Greys. The *Cochins*, though for the most part very good, were not shown in the high condition that might fairly have been expected, and among them were one or two pens most fearfully scalped, a most unusual thing among birds naturally so little given to fighting, and one that in all breeds should be carefully guarded against, by not placing strangers together in the same pen, the excitement of a show frequently inducing pugnacity among fowls the best of friends in their own homesteads. The *Brahmas*, excepting the two prize pens, were not nearly so good as might have been anticipated. All the *Hamburgh* classes were particularly good, the Spangled ones more especially. The *Polands* were first-rate. The class for *French* fowls was well filled, the *Crève-Cœur*s being the best variety shown. The *Game Bantams* were gems, and the entry was a large one. The cup *Duckwing* Bantams were worthy of particular note.

Aylesbury Ducks were well represented, Mrs. Seamons and Mr. Fowler being on the list, prevented the success of all rivals. The "Any other Variety" class for Ducks was excellent, and in this Mr. Harrison, of Beverley Road, Hull, exhibited a highly creditable collection.

The *Pigeons* were both numerous and excellent, Pouters, Almonds, Carriers, and Toys particularly so.

The attention paid by the acting Committee to the welfare of the birds was all that the most anxious owner could desire, and we are informed the return of the birds, after the close of the meeting, was prompt and well-arranged.

GAME (Black-breasted or other Reds).—1 and Cup, W. Boyes. 2, H. M. Julian. 3, S. Matthews, Stowmarket. *hc*, W. Gilliver; F. Sales; H. M. Julian.

GAME (Any other variety).—1 and Cup, H. M. Julian (*Duckwing*). 2, W. Boyes (*Duckwing*). 3, W. Bearpark. *hc*, S. Matthews (*Duckwing*); F. Watson (*Duckwing*). *c*, W. Gilliver (*Piles*); T. West (*Pile*).

GAME (Any variety).—*Cock*.—1, Cup, and 2, W. Boyes (*Red Game*). 3, G. R. Smith. *hc*, H. M. Julian (*Red Game*); S. Matthews (*Black Red*); G. Clements (*Black Red*); H. M. Julian (*Red*). *c*, W. Gilliver (*Black Red*). *Hens*.—1, W. Gilliver. 2, S. Matthews. *hc*, J. Hodgson; W. Hudson.

SPANISH.—1 and Cup, H. Beldon. 2, Hon. Miss E. D. Pennant. *hc*, F. C. Haworth; E. Brown; J. Smith; Hon. Miss E. D. Pennant; J. R. Rodbard. *c*, R. Fulton; G. A. Stephens; T. C. & E. Newbitt.

DORKINGS (Any variety).—1, J. White. 2, W. Harvey. *hc*, R. W. Richardson (*Silver-Gray*); W. H. Robson (*Coloured*); G. A. Stephens; Rev. G. Hustler; J. K. Fowler; G. Clarke.

COCHINS (*Cinnamon* or *Buff*).—1, H. Saville. 2, W. A. Taylor. *hc*, J. Cattell; W. A. Taylor; Bowman & Fearon.

COCHINS (Any other variety).—1, T. Stretch (*Partridge*). 2, G. Shrimpton (*White*). *hc*, A. O. Worthington (*White*); A. Pease (*Partridge*); H. V. Story (*Partridge*); W. Harvey; W. A. Taylor.

BRAHMAS (Any variety).—1, E. Leech. 2, A. O. Worthington (*Dark*). *hc*, W. Hargreaves (*Dark*); Hon. Miss E. D. Pennant.

*HAMBURGH*s (*Golden-spangled*).—1, H. Beldon. 2, G. Holmes. *hc*, J. Walker; J. White; T. Dean; Mason & Walker; T. Walker; H. Pickles, jun.

*HAMBURGH*s (*Golden-pencilled*).—1 and 2, H. Beldon. *hc*, J. Walker. *c*, W. Clayton; T. Bolton; H. Pickles, jun.

*HAMBURGH*s (*Silver-spangled*).—1, H. Beldon. 2, T. Walker. *hc*, H. Beldon; F. C. Haworth.

*HAMBURGH*s (*Silver-pencilled*).—1 and 2, H. Beldon. *hc*, J. Walker. *Polands* (Any variety).—1, Cup, and 2, H. Beldon. *hc*, W. Harvey.

FRENCH FOWLS (Any variety).—1, Mrs. J. Cross (*Crève-Cœur*). 2, W. Harvey (*French*). *hc*, C. S. Smith (*Crève-Cœur*); J. K. Fowler (*Crève*); W. R. Park (*Crèves*); W. O. Quibell (*Houdans*). *c*, Hon. C. W. Fitzwilliam (*La Fleche*); G. A. Stephens (*Houdans*).

ANY OTHER VARIETY NOT BEFORE MENTIONED.—1, R. Loft (*Sultans*). 2, H. Beldon (*Black Hamburghs*). *hc*, H. Saville (*Andalusian and Silkies*); R. Loft (*Sultans*); W. A. Burchell (*Silkies*).

GAME BANTAMS (Any variety).—1 and Cup, W. Adams (*Black Red*). 2, G. Noble. *hc*, A. Parsons (*Duckwing*); W. F. Entwistle; W. Adams (*Duckwing*); Miss E. A. Crawford; Mrs. White (*Duckwing*).

GAME BANTAMS (Any variety).—*Cock*.—1, W. T. Entwistle. 2, Miss E. A. Crawford. *hc*, G. Shrimpton; Rev. C. H. Crosse; E. Brown; T. Whittaker; J. R. Robinson.

BANTAMS (*Black or White*).—1, S. & R. Ashton. 2, S. S. Mossop (*Black*). *hc*, E. Cambridge. *c*, Rev. F. Tearle (*White*); W. Harvey.

BANTAMS (Any other variety).—1, G. F. Hodgson (*Sebrights*). 2, W. J. Cope (*Pekin*); *hc*, T. C. Harrison; H. Draycott (*Japanese*); H. Beldon; Mrs. A. Woodcock (*Japanese*).

DUCKS (*Aylesbury*).—1, J. K. Fowler. 2, Mrs. M. Seamons. *hc*, Mrs. M. Seamons; J. K. Fowler; M. Harrison.

DUCKS (*Rouen*).—1, J. K. Fowler. 2, J. Mason. *c*, J. White.

DUCKS (Any other variety).—1, T. C. Harrison. 2, S. & R. Ashton. *hc*, T. C. Harrison; Mrs. Cross (*Widgeon*); J. K. Fowler (*East Indian*). *c*, R. Beattie.

SELLING CLASS.—1, H. Yardley. 2, W. Stonehouse. 3, H. M. Julian (*Game*). *hc*, J. R. Jessop (*Golden-spangled Hamburgh*); R. Loft (*Sultans*); J. Renshaw (*Game*); H. Beldon; F. Sales (*Game*); J. Berry. *c*, F. & C. Haworth (*White Cochins*); J. Sykes (*Black Spanish*); J. Webster (*Golden-pencilled Hamburghs*); G. Holmes; J. Hall (*Piles*).

PIGEONS.

CARRIERS.—*Cocks*.—1, R. Fulton. 2, J. Hawley. *hc*, J. C. Ord; F. J. Leach. *c*, J. Thompson. *Hens*.—Cup, J. Hawley. 2, R. Fulton. *hc*, R. Fulton; H. Yardley. *c*, J. C. Ord; F. J. Leach.

POUTERS.—*Cocks*.—1, R. Fulton. 2, H. Snowden. *hc*, R. Fulton; H. Snowden; W. Harvey. *Hens*.—1 and 2, R. Fulton. *hc*, R. Fulton; W. Harvey; F. J. Leach.

TUMBLERS (*Almond*).—1, J. Fielding, jun. 2, R. Fulton. *hc*, R. Fulton; F. Graham.

TUMBLERS (Any other variety).—1, J. Hawley. 2, R. Fulton. *hc*, R. Minnitt (*Mottled*); H. Yardley; J. Mason.

BARRES.—1, R. Fulton. 2, J. Ivy.

OWLS.—1 and 2, J. Fielding, jun. *vhc*, Rev. F. Watson.

FANTAILS.—1, J. Hawley. 2, T. C. & E. Newbitt. *hc*, W. H. Tomlinson; T. C. & E. Newbitt; J. Walker; R. Lythe; J. T. Lishman.

JACOBINS.—1 and *hc*, J. Thompson. 2, T. C. & E. Newbitt.

TURBITS.—1, H. Yardley. 2, R. Fulton. *hc*, J. Fielding. *c*, H. Burniss; E. Shaw.

NUNS.—1, C. Lythe. 2, H. Yardley.

DRACOONS.—1, H. Yardley. 2, F. J. Leach.

ANTWERPS.—1, J. T. Lishman. 2, T. Statters. *hc*, J. Hawley; J. Galt.

ANY NEW OR DISTINCT BREED.—1, J. Hawley. 2, J. T. Lishman (*Magpies*). *hc*, A. A. Vander Meersch (*Isabels*); H. Yardley; J. Mason (*Satinettes and Magpies*).

SELLING CLASS.—1, C. Lythe (*Blue Owls*). 2, J. Hawley. *hc*, E. T. Dew (*Faultails and Dragons*). *c*, J. Hawley; G. Statters (*Kites*); G.

Fletcher (Fantails); J. Deakiu (Carriers); C. Lythe (Fantails); J. Mason; H. Taylor.

The Judges of Poultry were Mr. Harry Adams, of Beverley, and Mr. Edward Hewitt, of Birmingham; and for Pigeons, Mr. F. Esquilant, of London, and Mr. E. Hutton, of Padsey.

BEDLINGTON POULTRY AND PIGEON SHOW.

The following are the awards made at this Show, held on the 18th instant. We must defer further remarks till next week.

GAME COCK (Any variety).—1, John Brough, Carlisle (Black Red). 2, A. Buglass, Carlisle, Durham (Black Red). 3, E. Aykroyd, Bradford. *h.c.* J. Barrow, jnr., Bradley Field, Kendal (Black Red). *hc.* Joseph Brough, Carlisle. J. Hudspeth, Sunderland (Duckwing).

GAME (Black-breasted and other Reds).—1 and Cup, E. Aykroyd. 2, John Brough. 3, Joseph Brough. *hc.* W. Bearpark, Northallerton.

GAME (Duckwings and other Greys).—1, G. Taylor, Bedlington Colliery. 2, E. Aykroyd. 3, W. Bearpark.

GAME (Any other variety).—1, John Brough (Lemon-piled). 2, G. Percy, West Cramlington (White). 3, W. Drysdale, Dindoy (Lemon-piled).

HAMBUROS (Golden-spangled).—1, H. Beldon, Gostcock, Bingley. 2, S. & R. Ashton, Roe Cross, Mottram, Cheshire. 3, W. Bearpark.

HAMBUROS (Silver-spangled).—1 and 2, H. Beldon. 3, Dr. Wilson, Bebside Colliery.

HAMBUROS (Golden-pencilled).—1, H. Beldon. 2, W. R. Park, Melrose. 3, J. Musgrave, Longtown. *hc.* F. E. Schofield, Morpeth. *c.* T. C. and E. Newbitt, Epworth, Lincoln. — Ruberford, Cowpen.

HAMBUROS (Silver-pencilled).—1 and 2, H. Beldon. 3 and *hc.* R. Parsons.

COCHIN-CHINA.—1, M. H. Thnhron. 2, H. Beldon.

BRAHMA FOOTRAN.—1, E. Leech. 2, H. Beldon. 3, J. Gillis, Seghill. *hc.* G. Dixon, jnr., Whitehaven.

SPANISH.—1 and Cup, H. Beldon. 2, T. C. & E. Newbitt. 3, J. Stalker, West Sleekburn. *hc.* W. Sanderson, Whalton. *c.* R. Hawkins, Seabam.

POLISH.—1 and 2, H. Beldon. 3, R. Parsons. *c.* A. Buglass, Durham, (Golden).

BARN-DOOR (Cross bred).—2, T. Toft, Sunderland (Dorking and Ceebin).

ANY OTHER DISTINCT VARIETY NOT PREVIOUSLY MENTIONED, EXCEPT **BANTAMS**.—1, H. Beldon. 2, Rev. J. G. Milner, Bellerby, Leyburn (Hondans). W. R. Park (Crève-Cœur). *c.* J. J. Waller, Kendal; J. R. Holmes, Sunderland (Black French Gneelders).

COTTAPOERS (Any variety).—1, Sharp & Mycroft, Bebside Colliery (Black Red). 2 and 4, Joshua Stalker, West Sleekburn (Spanish and Brahma Footrars). 3, J. Have, Cowpen (Silver-spangled). 5, G. Laws, West Sleekburn Colliery (Duckwing Game). 6, R. Sium (Ducks). *c.* J. Lowes, jun. (Black-breasted Game); J. Smith (Duckwing Game); W. Young (Golden-pencilled); R. Sium (Ducks); J. Yellowly (Partridge Cochins); T. Johnson (Golden-spangled).

GAME BANTAMS (Black-breasted and other Reds).—1 and Cup, W. F. Entwisle. 2, R. Short. 3 and *hc.* J. R. Robinson. *hc.* W. F. Entwisle; G. Dowie. *c.* W. Ramsay; J. Young.

GAME BANTAMS (Any other variety).—1, J. R. Robinson (Duckwing). 2, W. Greaves (Brassy-winged). 3, W. Lawrenson (Duckwings). *hc.* W. Bell (Duckwings); H. Sharpe (Piles).

BANTAMS (Any other variety except Game).—1, S. & R. Ashton (Black). 2, T. C. Harrison. 3, S. S. Mossop. *hc.* R. Youll (Silver Sebrights); C. Richardson (Black); T. C. Harrison; H. Yardley. *c.* J. Robson (Gold-laced Sebrights); J. Clark (Black).

DUCKS (Aylesbury).—1 and 2, Mrs. Seamons. *c.* J. Ford.

DUCKS (Ronen).—1, E. Leech. 2, J. J. Waller. 3, R. Elmer.

DUCKS (Any other variety).—1 and *hc.* T. C. Harrison (Dun Divers). 2, Rev. J. G. Milner (Grey Call). 3, S. & R. Ashton (Carolina).

GUINEA FOWLS.—1, J. Robson. 2, J. Black. *hc.* Miss Robinson. *c.* Miss Smith.

SELLING CLASS.—1, T. C. & E. Newbitt. 2, G. Armstrong. 3, D. Cheyne. *hc.* J. Clark, E. Rutherford. J. Stalker. *c.* J. R. Robinson.

TURKEYS.—Prize, E. Leech.

PIGEONS.—**Carriers**.—1 and 2, W. R. & H. O. Blenkinsop. *hc.* H. Simpson; W. Taylor; D. Hunter; H. Yardley. **Trumpeters** (Almond).—1, W. R. & H. O. Blenkinsop. 2, T. C. & E. Newbitt. *hc.* H. Yardley. **Tumblers** (Any other variety).—1, H. Yardley. 2, J. Henderson (Baldpates). **Croppers**.—2, W. R. & H. O. Blenkinsop. *hc.* J. Grant; H. Simpson; W. R. & H. O. Blenkinsop. *c.* W. B. Van Haansbergen. **Owls**.—1, W. R. & H. O. Blenkinsop. 2, J. Grant. **Turbits**.—1 and Cup, T. C. & E. Newbitt. 3, W. R. & H. O. Blenkinsop. *hc.* H. Yardley. **Jacobins**.—1, W. B. Van Haansbergen. 2, J. Grange, jun., Bedlington. Extra 2, W. R. & H. O. Blenkinsop, Newcastle. *hc.* T. C. & E. Newbitt, Epworth; W. B. Van Haansbergen. **Fantails**.—1, H. Yardley. 2, T. C. & E. Newbitt.

ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—1, H. Yardley. 2, W. R. & H. O. Blenkinsop (Magpies). *hc.* J. F. Baldwin (White Capuchins); T. C. & E. Newbitt; W. R. & H. O. Blenkinsop (Barbs). *c.* W. B. Van Haansbergen (Barbs); H. Yardley.

SELLING CLASS.—1, H. Simpson, Shankhouse, Cramlington (Barbs). 2, J. F. Baldwin, Newcastle (Red Turbits). *hc.* H. Yardley; W. Wardle, Bebside (Dragon).

RABBITS (Long-eared).—1, Messrs. Bowman & Fearon, Whitehaven. 2, F. Stainburn, York. *hc.* J. Younger, Morpeth.

RABBITS ANY OTHER VARIETY. —1, J. Turnbull, Whiteopen. 2, J. Nensham, West Sleekburn. *hc.* J. Turnbull; R. Lewins, Morpeth (White Angola).

JUDGE.—Mr. E. Hutton, Garden House, Padsey, Leeds.

AN IMPROVEMENT ON THE KOEHLER PROCESS.

The following important improvement on the Köhler process for securing the pure fertilisation of queens of the Ligurian or any other variety of honey bee has been devised by Dr. Preuss, the distinguished German physician, a translation of whose able paper on the origin of foul brood I had the pleasure of

submitting to the readers of "our Journal" on the 22nd October last.—A DEVONSHIRE BEE-KEEPER.

HOW A QUEEN CAN BE CAUSED TO MATE NEARLY TO THE MINUTE OF AN APPOINTED TIME WITH THE DRONES OF A SELECTED HIVE NOT REMOVED FROM ITS PLACE, AND WITHOUT HER OWN HIVE BEING EITHER INTERRUPTED OR REMOVED.

The process recommended by Köhler and Dathe, which consists of placing the hives containing pure young queens, as well as those which contain pure drones, for several days in a dark cellar, and then, late in the afternoon, when no other drones are on the wing, to replace them on their stands, was at all events an important step in advance towards controlling the fertilisation of the queen, although it may be attended with certain disadvantages. The objection raised to it as being troublesome is well disposed of by Von Berlepsch, who remarks that a bee-keeper does not fear trouble. Still it is impossible to those who have a garden but no cellar as well, as in cases where bees are kept in immovable swarming hives and in pavilions. The method which I am about to communicate, by which neither the young queen nor the hive selected as containing pure drones is removed from its place, is on the other hand everywhere practicable and perfectly certain.

I, of course, assume that everyone who engages in breeding superior queens (by "superior" I mean the Italian and Egyptian races), will know the day on which they have quitted their cells; this knowledge being also presumed under the Dathe-Köhler method. Now, it has been established by careful observations, especially by those of Von Berlepsch, that the queen does not take her wedding flight before the fifth day of her existence, but that, on the contrary, we may consider the eighth as the day for the consummating excursion; and on this day, if the weather be favourable, it is almost certain that the queen will fly out for fertilisation. This fact, stated by Dzierzon, I have found confirmed in numerous instances. It is only unfavourable weather which causes a queen to defer her flight. On the fourth or fifth day, therefore, we examine the stock or artificial swarm, find the queen, and imprison her upon one of the combs under a wire pipe-cover of as large a size as possible, pressed into the substance of the comb until it comes in contact with the partition wall. I do not deem it wise to deprive her earlier of her liberty, lest the confinement should retard her development. I prefer in this case the pipe-cover to any other kind of cage, as the queen when ultimately set at liberty is at once upon a comb and among the bees. It is, however, still better if we have a wooden frame made exactly fitting the brood room of the hive or the box containing the artificial swarm, reaching from one side to the other, and from the top to the floorboard, and inserted in the same manner as a frame filled with comb. This frame being covered with wire gauze like a window blind, we can by means of it divide off a portion of the brood combs of a hive, or the whole of the brood of an artificial swarm. When, therefore, we have discovered the queen upon a comb, we hang it, bees and all, with a second comb, at the side of the hive farthest from the entrance, and divide these from the other combs by means of the wire frame, covering them when necessary with little cover-boards (*deckbrettchen*), and stopping all apertures with wood shavings, pasteboard, or paper. The bees, if they have their queen with them, and sufficient food, will remain quiet for days, and even weeks, whilst those not confined fly in and out and work as usual.

It is not advisable to effect the division by means of a mere wooden partition, as in the end, after some days' separation, the bees are apt to treat the queen as a stranger, and, consequently, with hostility.

Three or four days afterwards—i.e., when the queen is eight days old, or, if the weather be unfavourable, on one of the following days, and late in the afternoon when black drones are no longer on the wing, we first open the hive containing the pure drones—no matter if it stand at a distance from the queen's hive—take out one or two combs upon which many drones are congregated, and stand them resting safely against some object in the neighbourhood of the latter. The drones will soon take wing, and at first hover round the spot. We then open the queen's hive, take out the comb upon which she is confined, and after liberating her, either stand it near the entrance and resting against the front of the hive, or keep it in

* In the case of artificially-raised queens I have seldom found it take place so early as this, but consider the eleventh, or rather the twelfth day, to be the usual time.—A DEVONSHIRE BEE-KEEPER.

† First make sure that the queen of that hive is on another comb.—A DEVONSHIRE BEE-KEEPER.

the hand. As soon as the queen perceives the drones buzzing about her, she usually in less than a minute soars into the air, whence in from a quarter of an hour to an hour she returns fertilised to the hive, in order, after three days, to commence egg-laying.*

As soon as the queen has flown off we replace the combs with such of the drones as are not come to full maturity in their respective hives, which are then closed.

In this way we have the fertilisation of the queen bee as much under our control as horses, sheep, and cattle are in the hands of their breeders.

That it appears to be unnecessary even to place the comb on which is the young queen close to the entrance of the hive, and cause her to take flight from thence, is proved by the following case, which is interesting also in other respects:—

On the 10th of October, 1867, I received from Mr. Vogel a beautiful Italian queen, which I introduced to a strong stock. I may remark, by the way, that I had separated the old queen from her subjects on the 24th of August, forty-seven days previously, by confining her in a wire cage 6 inches long, and of the size of the cork of a wine bottle; that further, the bees (as often happens late in the summer if the queen be left in the hive), formed no royal cells; that the queen remained in perfect health after so long a confinement; and that the bees mourned her loss when she was removed, and for some days refused to accept the Egyptian queen, which was at first confined in the same cage. This stock inhabited one compartment of a sechsbenter,† passed the winter well in our northern climate in the open air, was strong in the spring, and by the end of May, 1868, consisted only of Egyptian bees and exquisitely beautiful Egyptian drones. A comb containing drone brood, taken from this hive, was on the 20th of June given to a second swarm of common bees, from which, after a time, the queen was removed. By the 6th of September I had neither German nor Italian drones remaining, but only these Egyptian drones, whilst drones had become extinct in the neighbouring apiaries. Having raised several young Egyptian queens in artificial swarms, it was not necessary at this time to imprison them, as in the height of summer, since, if left at liberty, their fertilisation must perforce be equally pure. A queen was hatched in one of these artificial swarms on the 20th of August, and her fertilisation was, therefore, due on the 27th or 28th; but from the 27th of August to the 5th of September the weather was so rough that no drones were abroad. The 6th of September was so glorious a day for the purpose, that I was desirous of ascertaining whether the queen, now seventeen days old, might not already have commenced egg-laying. The box in which I proposed to hang the combs after examining them, happened to be some eight paces distant from the swarm, and being heavy, I preferred, instead of bringing it near the hive, to carry the combs one by one to it, covering it carefully during the intervals, so that stranger bees might not enter. This box stood behind a strong-flying sechsbenter, and was also separated from the hive itself by a second sechsbenter. Having after a careful examination found no eggs, I commenced replacing the combs, and whilst taking a second look at a comb in the box, which, as stated, was eight paces from the hive, I saw the queen, which, attracted by the drones buzzing in the air, took wing the next moment, unaccompanied by any of her bees. I now hurriedly replaced the remainder of the combs, closed the hive, and set a trusty assistant to watch the entrance, so as to ascertain whether and when the queen returned. It was now precisely three minutes after one o'clock. The assistant dared not turn his eyes from the entrance for a single moment without previously closing it. In about a quarter of an hour we saw a little swarm of drones, among which the queen might have been, pass about 12 feet overhead and quickly disappear. When three-quarters of an hour had elapsed without her returning, I gave her up, supposing that she had missed her hive, gone astray, and was lost. I regretted her the more, as she was a very beautiful queen of a golden-yellow colour. We now set about other work in the apiary, when towards two o'clock an unusual degree of excitement was manifested by the artificial swarm, the bees crowding home from the fields, although the sky remained unclouded. We watched, thinking the queen might be at hand, and soon perceived her hovering in the air a few feet above the hive, where the next minute she alighted, and into which she was escorted by a crowd of bees,

which received her in the most joyful manner. It was now five minutes past two, and the queen had, therefore, been absent an hour and two minutes. On the 18th of September, twelve days afterwards, I found many large worms in the cells, and on the 21st, fifteen days after, sealed brood, so that the queen must have been fecundated on the 6th.

It seems very extraordinary that she should have been attended by such a multitude of bees on her return, when, as I saw, she took her departure alone. Where had they discovered her? Had they joined her while yet at a distance? or had they recognised her when near at hand, and then escorted her into the hive? Although she had been absent above an hour, I am disposed to think the latter hypothesis the more probable.

Supposing that the queen had not already learned her way back through having made previous excursions,† her safe return, after taking flight from a spot eight paces distant from her hive, may have been due to the large escort which met her and conducted her home in safety.—Dr. PREUSS, *Sanitätsrath*.

† I have little doubt that she had done so.—A DEVONSHIRE BEE-KEEPER.

EARLY GREEN FOOD FOR COWS.

I AM tempted to ask for information as to the name of the plant of which I enclose a few leaves, stalks, and flowers. It grows wild in our woods. The reason I trouble you about what is probably a common wild plant is, that the very first mild spring weather we have it seems to spring up as if by magic, and forthwith I send out my men to collect it in bundles for the cattle. They greedily devour it, and it occurred to me that if it could be brought into cultivation it would form a most valuable early spring food. I never observed it growing in open places, but always along hedgerows and under trees. Possibly it would not succeed without shade. I have purposely selected the smallest pieces for convenience of transit, but the stems we gather for the cattle are 3 and 4 feet in height. When they become older the cattle do not care for them, but when young and fresh-grown, they never tire of them.—C. R.

[The plant—a very common one in shady places—is known to botanists as *Charophyllum sylvestris*, and popularly as Wild Cicely or Cow-weed. Ray says that it received the last name because it is highly relished by cows in the spring before it becomes stalky. Others bear similar testimony, and one authority says that in a pasture where it abounded they turned cows in during early spring to eat-up the weed. Rabbits are also very fond of it. The root is poisonous to the human species.—EDS.]

OUR LETTER BOX.

MAKING FOWLS TAKE TO A ROOSTING-PLACE (Bobo).—You will have difficulty in making your fowls go up-stairs. They object to it not on account of the height, for if they were put in a barn they would fly from beam to beam till they were much higher, but they do not like a ladder. If you will make them roost there, you must catch them for some evenings, shut them in, and let them remain for at least two hours after daylight; they may then take to it, but the experiment will try your patience.

FEATHER-EATING FOWLS (H. R.).—We have tried everything we know, and all we can hear of, yet our Spanish fowls eat their feathers. The cocks are hideous, having only the tail and wing-feathers left.

EXTERMINATING RATS (Bantam).—You impose a hard task upon us when you ask us how you can exterminate rats. We have been trying unsuccessfully for years to accomplish it on our own premises. Hens, chickens, and eggs disappeared, valuable Pigeons were destroyed daily; we killed seventeen or eighteen per week, sometimes more—it seemed to make no difference. We tried the professional rat-catcher, he caught a great many, gave us a very high idea of his professional merit, and went away. We had just as many in a day or two as we had before. Wherever they can be put safely we put guns, at other places traps. Wherever we see a hole we fill up with loose gravel stones, not only the hole itself, but above it and around. We believe this is the only way of discouraging rats. They will overcome cement and glass bottles, but when, every time they move a stone, another falls into its place, they give up the attempt, they have no choice. We have six cats always prowling about, and two terriers "limbs for rats." With all these appliances, we still have some, and are every now and then reminded to our cost that our success has been only partial.

PIGEON PORTRAITS (A Subscriber).—Wolstenholme's paintings and engravings of Pigeons referred to recently by "WILTSHIRE RECTOR," can be obtained from the artist, Mr. Dean Wolstenholme, 3, Elizabeth Cottages, Archway Road, Highgate, London, N.

SCARLET VIRGINIAN NIGHTINGALE (S. V. N.).—The food to feed the Virginian Nightingale on is canary and hempseed, and all kinds of fruit, such as strawberries, apples, banana, &c.; the only green food to give it is lettuce. If it be a fresh bird, it should be kept in a cage with a wire front only, and kept in a secluded place, it being a very shy bird, but once it gets used to its quarters, it becomes a hardy bird, and not delicate at the moulting season, but at this time a little saffron should be placed in the water, and a little raw beef chopped fine, given to it twice a-week. We have not known it sing by night.

* Huber says two days, and my experience goes to prove that he is correct.—A DEVONSHIRE BEE-KEEPER.

† A compound hive, built to accommodate six colonies.—A DEVONSHIRE BEE-KEEPER.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 27—JUNE 2, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
27	TH	Meeting of Royal and Zoological Societies, [8.30 P.M.]	66.3	44.9	55.6	22	56	af 3	59	af 7	66	af 9	33	af 5	16	m. 8.	147
28	F		67.8	44.6	56.2	15	55	3	0	8	48	10	23	6	17	3 1	148
29	S		67.3	43.9	55.6	14	54	3	1	8	32	11	20	7	18	2 53	149
30	SUN		1 SUNDAY AFTER TRINITY.	68.0	44.8	56.4	17	53	3	2	8	noon.	20	8	19	2 45	150
31	M	Royal Horticultural Society, Fruit, Floral, [and General Meeting.]	70.3	45.0	57.6	16	52	3	3	8	7	0	23	9	20	2 37	151
1	TU		68.2	45.9	57.1	15	51	3	4	8	35	0	27	10	21	2 28	152
2	W		69.7	45.3	57.5	19	50	3	5	8	0	1	33	11	(2 19	153

From observations taken near London during the last forty-two years, the average day temperature of the week is 68.2°; and its night temperature 49.1°. The greatest heat was 91°, on the 28th, 1847; and the lowest cold 25°, on the 29th, 1861. The greatest fall of rain was 0.97 inch.

NIGHT TEMPERATURES DURING FORCING.

[So much has been written recently on this subject, enforcing views which we consider so erroneous and injurious, that on the receipt of a letter from a correspondent, we sent it to Mr. Fish. We insert the letter with his commentary.—Eds.]

DO not let it be supposed from the tone of these remarks that I am an enemy to free discussion, far from it, it is the "proving of all things" that I wish most particularly to urge; but I do wish that some of our gardeners would read more, and think more, would be more particular in tracing effect to cause and cause to effect, than they do before giving their opinions publicity. It would be much more to their credit, and would do us all much more good when reading their opinions; for, really, of all the nonsense that ever I read I think this high night temperature for the setting of Grapes bears the bell. Effect and cause, cause and effect, are so hopelessly muddled, that the result is "confusion worse confounded." And the recklessness with which all the old-world theories of vegetable physiology which we have been guiding ourselves by, and advising our sons to study and copy, are set at naught is amazing; and, then, the mischief these opinions do is almost incalculable. Employers who are fond of gardening, and who take in "our Journal," read these opinions and records of experiments by practical men. To them it looks and reads right, and as it comes through THE JOURNAL OF HORTICULTURE, it must be right, and then the persecution which the poor gardener has to suffer, if he happens to have an opinion of his own different to these, is almost incredible, and, no matter what may be the real cause of any failure he may have after this, it is all set down to his neglect of the advice of THE JOURNAL OF HORTICULTURE. Let me recommend these rash scribes who dogmatise so about their little experiments to read and study pages 208 and 514 to 524 of Lindley's "Theory of Horticulture," and pages 204 to 212 of the "Science and Practice of Gardening," by Mr. Johnson, one of our own Editors; if they will read these pages, and think on them, we shall not, I venture to say, be bored with the impossible conclusions drawn from imaginary premises which we have been bored with for the last few weeks.—X. Y. Z.

[Without at present referring to the authorities mentioned by "X. Y. Z.," I will base my opinion on my own experience and conclusions. No doubt it is of great importance to be very particular in tracing effects to causes, but this may often prove to be a more difficult matter than our correspondent supposes; as not seldom, when I imagined I had hold of the connecting link, farther experience has proved to me that what I considered to be demonstrated cause and effect was nothing more than a fortunate coincidence. All such disappointments should teach us at least a little charity when we review the opinions of others. A man who finds he can set Muscat Grapes in a temperature at night averaging from 60° to 65° should not be deemed reckless if he recommends a lower night temperature than that generally adopted; and neither should that man be

deemed reckless who considers he succeeds better than common from having a night temperature of from 75° to 80°. Most probably if the ploughshare of strict investigation were driven through such cases it would be found that the Vines would have succeeded under either treatment, or even in spite of it. I have set Grapes equally well in a comparatively low as well as a comparatively high temperature at night; but in the low temperature at night I was anxious that a higher temperature should be given during the day when the stimulus to expansion would be counteracted by the solidifying influences of light.

Some day I hope to shake hands with "X. Y. Z.," and then shall look at him hard to try and ascertain how many years have passed over his head; for to me it is something strange to have the high night temperature alluded to as something new, whilst the high day temperature and the comparatively low night temperature are described as the "old-world theories of vegetable physiology." Why, in my young days it was too "new" a "theory" to be much thought about, and still less practised. In forcing in general something like an equal average of temperature was chiefly aimed at—or only a little more by day than by night—just such a temperature as we might expect to find near the ground in tropical latitudes, where the dense growth of vegetation overhead prevented the ground being suddenly heated by the sun or cooled by free radiation. Frequently, from close shutting-up and covering, our good and successful old gardeners gave their plants a higher temperature in darkness than they did in the day, unless the sun shone very brightly. The high temperature at night is to me the "old-world theory," as well as contrary to Nature; and the letting temperature be regulated greatly by light is to me the "new" as well as the natural theory.

Be this as it may, it would be idle to deny that by adopting high temperatures at night grand results were obtained. What I contend is that these results were obtained by greater labour, and expense, and attention—by, in fact, making one part of our practice counteract and modify the other, just because, either ignorantly or knowingly, we were opposing natural laws, instead of being guided by them. I do not hint for a moment that in culture we are to imitate the variations of the weather, &c. But we may be guided by, instead of opposing the main principles of vegetable growth; though we neither permit storms nor tempests to get into our glass houses, the houses being built for the very purpose of keeping all such intruders out.

It is natural to all organised existence to repose in the darkness. Even to man a sleep by day is not so refreshing as a sleep by night. The plant, too, needs and must have comparative repose. Kept continually growing in a high temperature it exhausts itself, and wastes its powers prematurely, and to go no further than the case before us, as respects the Vine, is one fertile source of shanking of bunch and berry. Give a high moist temperature, and most free-growing plants will elongate more in darkness than in light. Continue the same stimulus to elongation by high temperature in the day, and the sun will be unable to consolidate the soft growth. Did our old gardeners know all this? Well, at any rate, they acted as if they did.

They took a roundabout road, but they kept the destination in full view. As already hinted at, they neutralised the high temperature at night by a comparatively low temperature during the day. For instance, be the weather what it might, in a vinery the temperature at from 10 to 12 P.M. must be from 67° to 70°, a little more when the Vines were in bloom, but no matter how bright the day, air must be given so that the house might range from 70°—scarcely up to 80°. The regularity of the heat at night must be maintained during the day. Pity the poor air-giver! in a large establishment, the watching of furnaces and flues was a trifle to the watching of clouds and sun. I have frequently given and reduced air four times in a dinner-hour. Every thermometer must show the definite mark of the mercury—an important matter for gaining habits of attention, and rather, I am sorry to say, at times for fostering deception, and leading to the cooking the scale of the thermometer. No wonder if the Sunday at home was looked forward to as a sort of purgatory. Now, whether intended or not, the keeping down the temperature during the day by abundance of air just neutralised the too free soft elongation of growth during the night. It was by no means a natural system, for, in the case of the Vine where it flourishes the best, there is often a difference of from 10° to 30° between the night and the day temperature, but it was made to answer by the day counterpoising the effects of the night, and at the expense of burning much more fuel, and much more trouble in air-giving, because the best and safest of all heat—that of the sun—was disregarded.

What I call the new natural system has been of the most importance perhaps to amateurs and those having but little glass. With a comparatively low temperature at night, and air-giving early, a fluctuating temperature from sunlight and cloud during the day is of less consequence. I have known first-rate Cucumbers grown early where the amount of air was seldom altered from 8 A.M. to 3 and 4 P.M. A very little practice and judging of the weather would enable one to have the temperature during that time from 65° to 85°, and as it would rise and fall gradually, the plants would flourish with an average night temperature of from 60° to 65°.

I should almost be afraid to tell how many years have passed since these ideas began to seethe in my mind, the result being an article under an assumed name in Loudon's "Gardener's Magazine," which then attracted some attention, and showing that writing anonymously is sometimes very useful. What particularly prompted the writing was the fact, that it was desirable in the place I then lived at as under gardener, to get in two vineries considerably earlier than usual, by a higher temperature at night, extra care every way, and plenty of heat and moisture during the day. We partly failed in our object, the Vines would not be driven, and when their produce was gathered it was neither so good nor so well coloured as usual. I believed then that the continued strain by night as well as by day exhausted the energies of the Vines just when most wanted, and which would have been there but for the continuous excitement of a high temperature, the stimulus at the top being more than the roots could reciprocate. At any rate, two later houses in every respect identical otherwise, that did not have one-third of the firing, because the fire heat was rarely above 60° at night, but with sun heat frequently ranging from 85° to 90°, had Grapes quite as early as the Vines that were more forced and in much better condition. I recollect that at the first place I held, having a visit from the author of the "Domestic Gardeners' Manual," a very clever writer on gardening and scientific subjects in different periodicals at that time, to whom Mr. Loudon had given my address, his object being to see if I practised what I had advocated. What struck him in a fine, sunny, spring day, was not so much the regular show of Grapes in a large vinery, but that that vinery was perfectly comfortable and pleasing to the senses, with a bright sun shining, and the temperature ranging from 85° to 90°. Three things he did or noted. He put his hands on the pipes and found them almost cold. He looked to the front of the house found no air on, and to the top at the apex, and found in a very wide house an opening for air from 1 to 1½ inch wide, and taking up a fine feather and fastening it to a string he found that the small openings for ventilation caused the feather to flutter close to the front of the house. I never had Grapes better set, and the night temperature was as often below 60° as above it, never above 65°.

In the same place I had some Dutch Sweetwater Vines on an open wall, and there they set exceedingly well year after year, though when in bloom the temperature was frequently as

low as 40° at night, but the sun's rays would raise the temperature near the wall fully to 80° and higher.

In few words, then, the great ease and economy of a comparatively low night temperature, are owing to the use we can make of the sun as a heating agent during the day and thus obtaining expansion along with solidification. I do not believe that Vines or other plants will long stand uninjured a very high temperature at night as well as by day, though some tropical plants may be exceptions. Again, keeping to the present case of Vine setting, though I have often set Muscats well at an average temperature of 65°, I should like it for a few nights when in bloom to be 70°. Also, as it seems to be a matter of dispute, I do not like the air of the house to be too dry at setting time, but in a sunny day would syringe and sprinkle the floor and stages. In fact, I have more faith in a high temperature by day from a bright sun, than a roasting heat by night. With air early given you will never have weak watery growth from sun heat. More in my opinion depends on the state of the Vines and the reciprocal action between the roots and branches, than upon any definite degree of temperature. I shall be, however, as much obliged to others for their opinions, though these may differ from my own, as if they fully coincided with mine; in fact, more so, as from varied facts and arguments we are more likely to arrive at a right conclusion.—R. F.]

THE INTERNATIONAL HORTICULTURAL EXHIBITION AT ST. PETERSBURG.

THIS great Exhibition was held at St. Petersburg, in the course of last week, in the Michael's Riding School, situated near the Michael's Palace, not far from the Neoski Prospect. This is said to be one of the largest buildings in Europe, having a roof of a single span. Its length is 539 feet, width 119 feet, and height 31 feet 6 inches. No better place could have been procured for the purpose, its only fault being that the great surface of ceiling was unlighted, and all the light was admitted through side windows. Besides this there were three annexes, two of which were hothouses for the reception of the tender stove plants and Orchids. On entering the great building it was evident that the Horticultural Society of St. Petersburg had made every effort to rival, if not to excel, their brethren of the West in their exhibition; and the first impression made on the visitor was that they had succeeded in both. The mode of arrangement was the gardenesque landscape style adopted at Brussels, Ghent, and London, and certainly with more effect than at either of these. To say that it was perfect would be wrong, for there were many blemishes which tended to neutralise, and in some cases to destroy, what might otherwise have been by far the finest, boldest, and most varied design of all the international exhibitions which have yet been held, and in no case was this more prominent than in the rockwork. This was formed of not large pieces of tufa, and where breadth and height were not required it was managed very well, flowering and fine-foliaged plants being skillfully interspersed so as to keep up the illusion; but where, as was the case at the north end of the great hall, it was employed to cover the face of an elevated platform 20 feet high, instead of being cemented together in large masses, and made to represent a heteromorphous and bold front, it was built up with all the regularity of a wall, and the spaces between were stuffed with moss. There was a crudeness also in the unusual whiteness which characterises Russian tufa, it being in some cases as white as chalk, and this might have been avoided by washing it over with stone colour.

When we speak so highly of the design as being freer, bolder, more varied, and, consequently, more in accordance with what it was intended to represent, than that of any of the previous exhibitions, it must not be understood that the Exhibition itself excelled in quality that of all others. What constituted its great merit was the fine result obtained by what experienced horticulturists would consider very common things, and there being a marked deficiency of colour, the effect was rather sombre than otherwise. When it is considered how very early in the Russian season the Exhibition was held, no trees out of doors having yet budded at St. Petersburg, it is not to be wondered at that colour did not prevail, as in our exhibitions it usually does. The fact is, it was a Russian exhibition, and the very best use was made by the Society of the material they had at their disposal.

At the south end, where we entered, there was a raised platform representing a terrace, bordered with a bold balustrade; and a

framework of lattice covered with Ivy, Clematis, and other climbers formed a canopy over it. Descending a wide flight of steps leading to this temporary garden, a broad walk led away on either side round a mass of well-flowered pot Roses. We shall not follow the course of these walks, nor attempt to describe the details of the design, for no amount of description can convey an exact idea of it. In the whole length there were two lakes, each with a *jet d'eau* rising to the height of 30 feet, which kept constantly playing, and the margins of these lakes were planted with aquatic plants. A rustic bridge formed of birch with bark of silvery whiteness crossed each of them, and we never saw in the same space a lake and a rustic bridge tell with more effect, so well proportioned were they, and so well did they harmonise with their surroundings. At the extreme north end of the building a fall of water was made to play over the objectionable tufa wall. The only object that marred the harmony of the whole was a pavilion too large for the place it occupied, which was erected on one side, and in the centre of the length of the building. It was much too prominent an object, and intruded so far into the body of the Exhibition as almost to amount to an obstruction. Taking the arrangement as a whole, it was well conceived and successfully carried out.

As regards the quality of the plants that constituted the Exhibition we cannot say a great deal. It is true we did not and could not expect to see the representation of those huge Azaleas, those oceans of Pelargoniums, those long banks of Orchids, those forests of Rhododendrons, and that brilliancy of colour that dazzles the eye and awakens the admiration in our exhibitions at home. With the exception of the Palms, tree Ferns, Pandanus, Dracenas, and other of the plants with ornamental foliage, the great majority of what was employed to make the Exhibition were masses of small plants grouped together with effective skill. Further on we shall allude to this subject more in detail.

The formal opening took place on the 17th of May by a solemn and impressive religious service. A *Te Deum* was sung, after which the officiating priests formed a procession, sprinkling the plants with holy water, the choir following and singing as they went, after which the nomination of the Juries was proceeded with; and it was expected, as no doubt it easily might have been, that the judging would have been completed the same day. But here it was that the management broke down, for when the Juries proceeded to exercise their functions it was found that none of the subjects for competition were numbered, and consequently neither classes nor numbers could be found. The whole of Monday, therefore, was a blank. We mention this more as a warning and as a guide to others who may have to undertake the direction of such exhibitions than for any other purpose, for delays such as these, where so many Jurors are collected from distant parts, and who are desirous of performing the duties of their office that they may be free to employ their time otherwise, lead to irritation and disappointment. It was evident that the arrangements in this department of the executive were very deficient, and this arose from those who ought to have been acting as directors of others taking upon themselves the execution of minor details. Even up till the third day the members of the Jury were not free from attendance on their judicial functions. It ought always to be borne in mind by the projectors of these exhibitions, that the real object of visitors from foreign parts undertaking long and in many instances very expensive journeys, the cost of which they themselves have to defray, is not so much to see an exhibition of plants as to form the personal acquaintance of those whom they only know by correspondence, and to strengthen friendships already formed. We will undertake to say that not one of the visitors from the West to St. Petersburg, except those who went as exhibitors, and not even some of them, was induced to undertake so long a journey for the sole purpose of seeing this exhibition; and therefore every preparation ought to be made that no delay should take place in enabling them to economise their time.

There is another lesson may be learned from the experience of this Exhibition, and that is the importance of placing in the hands of visitors on their arrival a programme of all that is intended to be done during the continuance of it. Every person then knows how to dispose of his time and what engagements to make. In the absence of such a document all is uncertainty and hesitation, and much valuable time is wasted. Unfortunately much inconvenience arose here from the absence of such an arrangement, the only intimation of what was to be done being given the day previously, sometimes not always accurately; and while some received the intimation, there were

many who were in total ignorance of what was going on. The announcement that the Emperor would receive the visitors at the Tzarskoe Celoe was printed only in Russian, which few could read, and it was by the merest accident that those unacquainted with that language became aware of the fact. We mention these cases in the kindest possible spirit, and without any reflection upon our exceedingly kind and hospitable friends. Other international exhibitions are announced and some contemplated, and it is by the experience of the past that errors in the future may be avoided; and it is with this view that we now refer to the subject, that those inconveniences may be remedied.

On Monday, the 17th, the Exhibition was opened to the public. The foreign visitors who had received decorations for distinguished merit, and those holding official rank, appeared *en grande tenue*. A brilliant assemblage of Russian officers, among whom was the able and amiable General Todleben, were in attendance, and precisely at one o'clock the Emperor appeared. His Imperial Majesty was received by Admiral Greig, the excellent President, and other officers of the Society, and after a short pause on the platform His Majesty made a circuit of the Exhibition, hardly pausing till he came to the annexe in which the tender plants were. Here he rested, and complimented M. Linden and M. A. Verschaffel, and continuing his course he stopped in front of the Orchids of Mr. Robert Warner and Messrs. Veitch & Son. After a few words of well-merited commendation His Majesty pursued his course, and retired from the building amid the cheers of the company present.

On Tuesday, after the morning spent in further judging, the members of Jury were invited to the Taurida Palace, an unoccupied residence of royalty, possessing little interest. But here a sumptuous *déjeuner* was provided, and everything done to render the visit of their guests to St. Petersburg agreeable by the authorities of the Society. Here again the absence of such a programme as we have indicated was apparent in its results. No invitation had been given to an entertainment, and several of the visitors, who knew that the old Taurida possessed in itself no attractions, thought it better to employ the time in visiting objects of far greater interest. This gave rise to a feeling of disappointment on the part of the entertainers, that somehow they wished to have seen present were unfortunately absent.

In the evening the first meeting of the Botanical Congress was held in the Library of the Admiralty, under the presidency of Professor Fenzl, of Vienna. At this meeting it was announced that the Emperor would receive the members at Tzarskoe Celoe at one o'clock on the following day. Accordingly the next morning there was a rush to the railway, and about eleven o'clock the train deposited its living freight at the pretty station of the imperial residence. Here royal carriages, chais-a-banc, and droschki in ample number were in waiting, and under the direction of Admiral Greig conveyed the visitors to the domain surrounding the Tzarskoe Celoe. The season was as yet very early, the Lilacs not in leaf, and the Oaks barely budding. The Caragana hedges were cautiously unfolding their graceful downy foliage, and though the sun was hot, the general aspect of all around was that of retiring winter and coming spring. Abundance of handsome, well-grown Spruce preserved verdure to the landscape, which was far from having anything of the dreary look of winter, and the young grass just sprouting, and an abundance of wild flowers, helped to enliven the scene. Through this beautiful domain, so skillfully and so tastefully planted by the Empress Catherine, the numerous visitors were conducted, visiting the orangeries, the splendid lake, the boat house, with its great variety of boats, the armoury, containing objects of great value and interest, and finally landing at the palace itself. Here they were conducted up a double flight of wide and handsome white marble stairs to a suite of public reception rooms, magnificent in all the splendour of gold and silver and of rich decoration, and the floors subjects of the most exquisite workmanship. In one of these rooms the delegates from governments and societies were selected from the rest of the mass for presentation to His Imperial Majesty. They were ranged according to their nationalities, and after waiting some time each was in the first instance introduced to the "Ministre des Domaines." This over, they were informed by the Minister that the Emperor would hold a reception in the Jardin Reservé, and thither all were conducted, and standing on the terrace His Majesty was observed ready to receive them. Each of the delegates was in turn presented by Admiral Greig, and His Majesty, accompanied by the Empress, entered into conversation with

several of them. Her Majesty also doing the same. After the formal introduction the Emperor himself acted as guide, and conducted the party through the summer house of the Empress Catherine I., explaining everything of interest as he passed along, and having addressed the party, he retired amid the cheers of those present.

Returning to the Palace a splendid luncheon was discovered to which all were invited, after which, and a visit to the forcing gardens, home farm, and dairy, the party were conveyed to the railway station, highly gratified with their reception by the Emperor and their visit to Tzarskoe Celoe.

In concluding our observations on the general subject of this memorable *r union*, we congratulate the Horticultural Society of St. Petersburg on their marvellous success in a climate where Plums, Apricots, and Peaches must be grown indoors, and Laurels and Aucubas require protection during winter; and we also tender to them our sincere and hearty acknowledgements of the sumptuous hospitality and unwearied attention with which we were received.

The British botanists were represented by Dr. Hooker, of Kew. Dr. Hogg and Mr. Andrew Murray were delegates from the Royal Horticultural Society; and British horticulturists were represented by Dr. Moore, of Dublin, Mr. Harry J. Veitch, Mr. Robert Warner, Mr. Gower, from Mr. B. S. Williams, and Mr. Stenger, from Messrs. Carter & Co. We take this opportunity of paying a well-merited compliment to Mr. Gower, who packed and conveyed the rich collection of Orchids exhibited by Mr. Warner and Messrs. Veitch, a distance of nearly two thousand miles by rail and sea without the least casualty, and set them up in condition which would have been creditable if they had come but from Chelmsford to Kensington.

We shall now proceed to a detailed account of the Exhibition.

The Exhibition may be divided into three parts. We will begin with the belt of plants which extends round the sides of the building, then proceed with those arranged in the centre, and lastly, those staged in the annexes to the main building.

Entering and turning to the right the first plants are a large semi-circle of forced Roses in pots, which form a very handsome and creditable group. The varieties are not particularly new, but comprise many of those esteemed the best by English Rose-growers, and which are to be seen in most of our gardens of any pretensions. The style, however, is superior to that in which forced Roses in England are usually turned out. The specimens are not such as we usually associate with that term, and which are seldom seen but at our exhibitions, but are plants grown and suitable for either conservatory or table decoration, in ordinary 8-inch pots; they are from about 12 to 24 inches high, bearing from six to twelve flowers each, and the foliage well developed.

Next in succession is a large group of Palms arranged for effect, and which, we believe, is from the Botanic Gardens at St. Petersburg; they comprise among others, fine specimens of *Ceroxylon andicola*, *Phoenix dactylifera*, *Brahea dulcis*, *Rhapis flabelliformis*, *Areca alba*, *Sabal Palmetto*, *Caryota urens*, *Chamærops hystrix*, and *Coccothrombolia*. The last is an elegant species, and particularly useful in its young state as a decorative plant. Some fine *Araliaceæ* are next noticeable, varying from 2 to 10 or more feet in height. Amongst the most remarkable are good plants of *Aralia mexicana*, *pulehra*, *platanifolia*, *guatemalensis*, *Sieboldii*, and its variegated variety, and *Oreopanax furforacem* and *denticulatum*. Some remarkable Palms and other plants are next encountered, and one very fine plant of *Banksia serrata*, the sight of which causes a regret to arise that nearly all the species of this genus are now lost to our gardens, for although the order to which they belong is remarkable for ugly gouty-looking plants, yet *Banksia* and a few other genera are decidedly highly decorative.

The succeeding group is very gay with flowering plants, such as large *Acacias*, *Cytisus*, *Camellias* of various colours, *Rhododendrons*, and *Azaleas*, amongst which are interspersed several variegated *Acers* and *Viburnums*, which have a pretty effect, but the less said concerning the style of growth the better.

Large specimens of Palms, *Aralias*, *Dracenas*, *Pandauns*, *Phormiums*, and *Yuccas* next form a background to a good group of *Cinerarias*, which are both of fair quality and well grown. An immense vase which here stands near the edge of the walk displays to advantage the beauties of *Phoenix sylvestris*, which is planted in it.

The next group is one of Conifers in pots and tubs, which do not, however, present anything remarkable to an English eye, because we have them so much finer in the open air. A fine specimen, some 20 feet high, of *Libocedrus chilensis* must not be passed over in silence, nor a nice plant of the rare *Phyllocladus rhomboidalis*, and *Thujopsis dalabrata*.

The class for European and terrestrial Orchids met with only one response, and this was a very pretty group, comprising, amongst others, *Cypripedium macranthum*, with its large purple flowers; *C. Calceolus*, with bright yellow lip and *C. parviflorum*; *Orehis tephrosanthos* and *canescens*, with several others, and a pretty example of *Ophrys arach-*

nites, and most of the species found in our own island, which clearly proves the Russians can grow these plants in pots, and even force them; for, as the ice has broken up only some three weeks, they could not have grown them in the open air.

The next display is a set of variegated herbaceous plants, such as *Funkias*, *Spiræas*, *Farfugium*, *Sedums*, *Polemoniums*, *Saxifragas*, *Tussilago*, *Convallarias*, &c.; but in no instance could we observe anything different from what could be seen at home a few years ago, before these plants went out of fashion, and which will be a great loss to our gardens if entirely discarded, but we believe a reaction is taking place, and that hardy herbaceous plants will be in great demand again ere long.

A bold mass of rockwork follows this, formed of medium-sized blocks of tufa, upon which are arranged a very creditable collection of Conifers. The plants need not be enumerated, as there were no new varieties amongst them; but they would have presented a far better appearance had the rockwork been built up round their tubs.

Passing a clump of *Rhododendrons*, very well flowered, some fine examples next present themselves of *Dracena australis*, *umbrellifera*, *cannifolia*, and *marginata*, in front of which is a collection of tree Carnations, both well grown and flowered. As the names, however, are written in Russian, they must remain in oblivion to the English reader of these remarks. Some were very rich dark-coloured selfs, others light, and a few very beautiful flaked varieties.

Next comes, perhaps, the most heterogeneous group in the whole Show, but still a good general effect is produced. It consists of large *Laurustinus*, *Azaleas*, *Hydrangeas*, *Oranges*, *Phrynium sanguineum* (the flowers of which have a pretty appearance when backed-up with dark green leaves), *Billbergias*, *Dianthus*, *Syringas*, *Palms*, *Fuchsias*, and scarlet *Pelargoniums*, more Conifers, and then follows a glorious mass of foliage, consisting of fine specimens of *Areca rubra*, *Astrocaryum mexicanum*, *Chamærops gracilis*, *Thrinax elegans*, *Martinezia caryotifolia*, several pretty species of *Geonoma*, *Sabal Blackburniana* and *Adansonii*, the beautiful *Latania Jenkinsii*, *Arenca saccharifera*, several *Cycads*, a few small *Musas*, and a superb specimen of *Ceroxylon andicola*. These plants are well arranged, and present a magnificent appearance. Another monster vase here displays to great advantage a fine plant of *Chamærops Fortunei*. Many may think such plants are not suited for vases, but if the vase is both large and high enough, the effect produced is grand.

The pathway now gently rises until we come upon the raised terrace extending across the end of the building, and which is supported by a bank of rockwork; this is badly built, being almost perpendicular, as before mentioned, and not at all resembling a natural formation. Nature is presented as being most beautiful here, for a vast number of genera and species are plunged in and about the blocks of tufa with a very pleasing effect. They consist principally of large masses of *Phormium tenax*, *Rhopala*, *Aralias*, *Rhododendrons*, *Alocasias*, *Dracenas*, *Wallflowers*, and many other plants. Over this rockwork a fall of water is precipitated, which supplies the stream winding down the centre of the building. Here, just before stepping on to the terrace, is a collection of variegated *Hollies* in pots, which causes the mind to return to the fact that we are not in the favoured climate of England, and that where the winters are so rigorous that the gardener must find house-room for such plants, he must labour under immense disadvantages. From this place a beautiful view of the Exhibition is obtained. Large clumps of ornamental-foliaged plants and of flowers are arranged along the middle of this vast building, with a stream of water traversing the centre, and from which several fountains throw up jets of water with a very pleasing and refreshing effect.

Turning from the central pavilion, we find a border running along the whole terrace, and filled with a well-arranged (though not well grown in many instances) group of plants, comprising standard *Roses*, *Narcissus*, *Dianthus*, *Azaleas*, *Kalmias*, *Cinerarias*, *Tulips*, *Francisæas*, *Pelargoniums*, *Acacias*, *Rhododendrons*, and *Lilacs*, and edged alternately with plants of variegated *Funkia* and *Auriculas*. Descending the steps at the opposite end to that by which we reached the terrace, we are surrounded by many fine ornamental plants, the most remarkable of which are Australian Tree Ferns, *Rhopala corcovadensis*, and others, *Brexia chrysophylla*, *Grevillea robusta*, *Cycas circinalis*, &c. At the bottom of the flight of steps stand a beautiful match pair of standard Bay trees, with stems upwards of 6 feet high, the heads measuring more through. The surrounding foliage is here enlivened with a semicircular bed of *Cinerarias*, being nice dwarf well-grown plants, and the colours beautifully blended. They are backed by *Palms*, *Pandanus*, and *Yuccas*, and edged with *Adiantum cuneatum* and some variegated *Begonias*. A group of *Hydrangeas*, both green and variegated, in flower, although the trusses are small, is rendered very attractive by an edging of erect-flowering *Gloxinias*.

Passing several groups which, although they contain some fine ornamental plants, need no mention here, as we have before enumerated the same kinds, and leaving the scarlet *Pelargoniums* until managed better, the next worth notice was a large bed of *Pansies* in pots. Now, these varieties, though perhaps worthless as florists' flowers, are yet of great value when forced as these were for early spring decoration, and they were admirable, and worthy of our imitation.

The finest Conifers in the Show now follow. They have been grown in the open ground in the neighbourhood of Hamburg, and transported here in baskets, and will no doubt make many of the Russian gentlemen and gardeners regret it is not possible to have such specimens in

St. Petersburg; amongst them are some of the choicest kinds we have in England, but nothing new. These are succeeded by one of the gems of the Exhibition—viz., *Dianthus Valeri*; for early forcing for the decoration of the conservatory, greenhouse, or for cutting for bouquets this is valuable. It grows from 18 to 21 inches high, and is loaded in profusion with its beautiful reddish crimson, double flowers, and when forced as these are, no description can do them justice.

A bed of *Myosotis*, which follows, with nearly all the flowers fallen, looks remarkably dull after the brilliant display of the *Dianthus*. There is another repetition of *Palms*, and then a fine bed of *Stocks*, and one of well-flowered *Deutzia gracilis*, which needs no comment. A group of rich dark Wallflowers succeeds this, well-flowered, and with foliage well-developed, in 48-sized pots, which should be a hint for those who require early flowers, but who have but little means allowed for the purpose.

Passing by some poor *Mignonette* and other things, a group of forced *Iris* is approached, and which we were not aware could be forced with such good results. A collection of *Thorns* is another novel feature of this Exhibition, which, although very pretty, are infinitely inferior to the glorious specimens we see at home. Some plants of *Pyras malus*, *Ledum palustre*, *Berberis vulgaris*, *Lilacs*, and *Azalea pontica* make a handsome group; a bed of *Asperula azurea*, however, proves that its room would be better occupied with something else. The old *Acaecia armata*, which is here exhibited of great size, is very brilliant, and we hope to see this fine genus again largely cultivated in English gardens, whence *Acaecias* have unaccountably departed within a few years. A group of *Camellias* of great size, but inferior varieties, we pass in silence, and next meet with a large and handsome bed of *Hyacinths*, which, although not equalling those lately exhibited at Kensington by Messrs. Cutbush and Paul, are yet highly commendable. This terminates the side beds in the building.

Facing round to the centre, there is a large irregular-shaped piece of lawn, green moss being substituted for grass. Upon this stand several fine specimen plants in bold relief, and giving a very tropical appearance to the place. First is *Pandanus farcatus*, spreading its leaves for a considerable distance. Plants of this genus, though mostly strong-growing, are very ornamental, and where room can be afforded, are amongst the finest plants for tropical effect that can be grown. A handsome young *Arancaria*, about 14 feet high, is also very beautiful, and affords a most striking contrast to its neighbour the *Pandanus*. A fine *Cycas circinalis* and remarkably good *Dicksonia antarctica* comprise the specimens here. Under these are various groups, arranged as flower beds upon a grass plot. Immediately in front of the flight of steps leading down from the terrace entrance is a bed of handsome *Azaleas*, exhibited by M. Vervaeke, of Ghent, and which had travelled remarkably well; none of the varieties were different from those which are grown with us. They were half-standards, and beautifully flowered. A circle of small *Orange trees* in fruit had a charming effect; but two ovals of *Scarlet and Variegated Pelargoniums* were miserable. Two oblong beds of *Show and Spotted Pelargoniums* need no comment, being made up of such plants as one so frequently sees upon the stalls in Covent Garden Market.

An oval bed of *Rhododendrons* was very pretty, as was also a small bed of *Gloxinias* of the erect-flowered varieties. A very remarkable bed of *Lilium candidum* and bulbiferum beautifully flowered, is another proof of the skill of the Russian gardeners in the forcing department. In proximity to these is a splendid group of *Palms*, but from some unexplained cause but few of the exhibitors' names have been attached to the collections. Amongst them we remarked in superb condition, *Areca Verschaffeltii*, *Calamus Verschaffeltii*, *Oreodoxa regia*, *Areca speciosa*, *Lienala elegans*, *Latania rubra* and *aurea*, *Areca aurea* and *concinna*, *Attalea compta*, *Ceratolobus glaucescens*, *Desmonchus mexicanus*, *Zalacca Wagneri*, *Martinezia caryotifolia*, *Brahea calcarata*, *Geonoma Verschaffeltii*, *Phoenixophorum sechellarum*, *Bactris culsa* and *maraja*, *Chamerops tomentosa*, and several others.

The next is one of the most beautiful contributions in the building. It is a grand bank of several hundred standard, half-standard, and dwarf *Roses* in pots, in which, at equal distances, stand marble busts of the Emperor and Empress. To say they are grand is saying all one can say for them in a single word. They are grown in 32 and 24-sized pots. The foliage is most luxuriant without being gross; the flowers are large, well-formed, and produced in abundance. The attention bestowed upon this flower fully proves that its beauties are heartily appreciated.

The next attraction is a somewhat oval bed, the centre filled with *Palms* placed upon pedestals, and then filled in with *Azaleas* and *Camellias*, and edged with *Tulips* and *Mignonette*; but truth compels us to say that, with the exception of the *Palms*, the cultivation here exhibited is nothing more than commonplace.

The banks of the water are neatly laid with green moss, and round about are distributed *Ferns*, large *Bamboos*, *Anthuriums*, *Rhododendrons*, and *Alocasias*.

We next come to the pavilion, which stands high above the plants upon a mound of rockwork, and from which the beauty of the display can be seen to perfection. Planted in and standing upon various parts of this mound are a most heterogeneous collection of plants, anything but natural, but producing a good effect. They comprise *Azaleas*, *Calceolarias*, *Deutzias*, *Gloxinias*, *Stocks*, *Wallflowers*, *Aloes*, *Haworthias*, small *Ferns*, *Acacias*, *Kalmias*, *Tulips*, *Jasminums*,

Fransisceas, *Escallonias*, *Rhododendrons*, *Hyacinths*, *Banksias*, *Cytisus*, and several other New Holland plants.

Near this from some Russian exhibitor is a very creditable collection of young *Cenifers* in pots, containing a fine specimen of the curious and rare *Phyllocladus hypoleucus*. From the gardener in chief to the Grand Duchesse Helene Paulowna comes a collection of *Palms*, and *Ferns* very clean and well-grown, but as the kinds are the same as those already noticed they need not be repeated.

From M. A. Verschaffelt, of Ghent, come some good plants of choice *Cycadaceae*, the principal of which are *Encephalartos Gheleini*, *Zamia plumosa*, *Cycas aurea*, and *Zamia cycadifolia* and *Lehmanni*. Succeeding these are more beds of splendid *Roses* and *Cinerarias*, some edged with *Adiantum cuneatum* and others with *Selaginella apoda*, and containing a *Pandanus*, *Palm*, *Musa*, or sack-like plant, as a centre specimen.

From M. A. Dallierie, nurseryman, Ghent, comes a pretty collection of *Palms* of kinds already enumerated. Next is a gigantic *Encephalartos Altensteinei*, having an immense spread of fronds, and standing out as a single specimen it has a superb effect. The large group is composed of *Palms*, *Ferns*, and *Dracenas* for foliage; and for flowers are arranged *Azaleas* and *Rhododendrons*; the intermediate spaces being filled in with *Deutzia scabra* and *gracilis*, *Cereus* of various kinds, *Foxgloves* both white and purple, *Dahlia*, *Lilium candidum* and *aureum*, *Oranges*, *Fransisceas*, *Myosotis*, and *Spireas*, the whole forming a good group, and if the season and place are taken into consideration a very extraordinary group. A large bed of *Lily of the Valley* is very fine, as also are a collection of *Palms* exhibited by M. A. Verschaffelt, who also exhibits a collection of twenty good species of *Agaves*, and a very fine specimen of *Alsophila australis* and *Todea barbatula*, which is probably identical with *T. australis*, which some again say is the same as *T. africana*.

The foregoing comprises nearly all the plants in the main building, and we must now look for the *Orchids* and new plants. In passing to these we observed some very pretty vases, splendid collections and bouquets of natural flowers dried and dyed; some collections of Russian hanging baskets; a fine collection of garden tools, mowing machines, knives, and seeds from Messrs. Veitch & Sons, of the Royal Exotic Nurseries, Chelsea; a model of a double-roofed English *Orchid-house* from Mr. R. Warner, of Broomfield, Essex, for which a small gold medal has been awarded; and another curious one of a Russian plant-house, showing the wooden shutters with which they are compelled to cover the roofs of their houses during winter as protection from frost and snow.

Now, passing into what is miscalled the orangery, we find here are associated the gems of the Show—*Orchids* and choice, new, and rare plants; and one cannot but feel gratified to see England so nobly represented, and her credit so well upheld as it is by Mr. R. Warner, of Broomfield, Essex, who exhibits no less than thirty-six plants of *Orchids*, many of them splendid, and in some instances unique specimens, and looking, in spite of their long journey, as if they had only been conveyed from Broomfield to Kensington, and how they were conveyed in such condition is marvellous, and certainly must be recorded as one of the greatest feats ever accomplished in connection with horticultural exhibitions. We are highly gratified to find Mr. Warner has been awarded five gold medals and one silver medal. Amongst his principal plants we noted *Phalaenopsis Schilleriana*, a grand specimen with upwards of fifty flowers in great beauty, and as many more that had just passed their best; *Cypripedium Stonei*, with nine fine flowers; *C. Lowii*, with eight; *C. villosum*, with fifteen; *Lycaste Skinneri*, with about eighteen; *Dendrobium macrophyllum giganteum*, with a profusion of its immense blooms; and *D. densiflorum*, the flowers of which are so difficult to preserve, had travelled admirably. A fine plant of *Odontoglossum nevian majus* had four spikes of its singular and charming flowers; *Odontoglossum Reichenheimi*, was fine; but such a plant of *Trichopilia crispata*, which deservedly won the first gold medal as a single specimen, has probably no equal in Europe. A good plant of *Odontoglossum Alexandræ*, although bearing many spikes, had only one of them fully expanded; a small specimen of a beautiful variety of *Odontoglossum membranaceum*, with bright reddish-purple flowers, attracted much attention amongst the lovers of these plants, and was called *O. membranaceum Warneræ*, in honour of Mrs. Warner, who is as great an admirer of this class of plants as Mr. Warner himself. A plant of *Vanda suavis* with four spikes of bloom, although fine, had evidently suffered somewhat by its journey, as had also the fragile flowers of *Cattleya Skinneri*. A beautiful and dense-flowered variety of *Oncidium leucochilum* was also good. A fine plant of *Phalaenopsis grandiflora aurea* was exhibited, but its flowers were fast fading when we saw it; not so, however, a splendid variety of *Trichopilia crispata*, called *marginata*, which was just unfolding its beauties. Amongst the others were *Vanda tricolor*, *Anguloa uniflora superba*, *Acridas virens* and *Fieldingii*, *Cypripedium barbatum Warneri*, a unique and very bright-coloured variety, &c.

Amongst the new *Orchids* exhibited by Mr. Warner, was a fine large-flowered species of *Scuticaria*, and a very peculiar new *Epidendrum*, which may prove a fine thing when it has become better established.

Next these plants were staged those from Messrs. Veitch & Sons, of Chelsea, whose *Orchids* were also in beautiful condition; and it must have been a great treat to the lovers of plants in St. Petersburg to see for the first time the true *Vanda insignis*, *Vanda Bensoni*, the

glorious *Masdevallia Veitchii*, and *Dendrobium Bensoniae*, all of which rarities have been introduced to cultivation through that well-known firm, and which received, most justly, the first prize in their respective classes. Some Orchids were also staged by M. Linden, the well-known nurseryman of Brussels, which, although late in coming, were in very good order. Two *Vandas* in particular were very fine—*V. tricolor*, having six good spikes of bloom, and *V. suavis* three. The other Orchids exhibited by M. Linden were the rare *Ada aurantiaca* and *Miltonia Warscewiczii*, *Odontoglossum nereum*, *Cypripedium candatum splendens*, a new variety, but not in bloom; the beautiful *Warrea discolor*, and *Oncidium serratum* and *nubigenum*; *Miltonia radiata*, *Cypripedium concolor*, *Odontoglossum Pescatorii*, *Trichopilia crispa*, *Mesospidium sanguineum*, *Aërides japonicum*, and *Nasonia cinnabarina*.

We now leave the Orchids and pass to the new plants, and here M. Linden is, as usual, in the foremost rank. The most remarkable amongst M. Linden's new plants were *Rudgea nivos*, a compact-growing shrub with large trusses of woolly snow-white flowers, which must become a general favourite; *Philodendron Meloniui*, a fine plant with large obovate leaves; *Carludovica imperialis*, which promises to be a magnificent plant; *Xanthosoma Wallisii* has pretty sagittate leaves, all the veins of which are margined with white; *Episcia tessellata*, another distinct and handsome species with large bronzy bullate leaves. A curious *Passiflora*, with white variegated bat-wing-like leaves, is a most distinct species, as is also *Dioscorea eldorado*, which has the beautiful gold veinings of an *Anacochilus*. *Anthurium trilobum* in large collections will form a handsome and distinct plant, but we fear it will soon attain too large a growth for those who have only limited room; *Furcraea Lindeni* is a handsome plant, with the margins of its long leaves broadly margined with creamy white; but one of M. Linden's best introductions of the last few years is, undoubtedly, *Tillandsia Lindeni*. It is of neat rosulate habit of growth, throwing up a scape of splendid large rosy cernice bracts, which are arranged in a distichous manner, and are very persistent. Between these are produced flowers as large and similar in shape to a *Franciscia*, with the fine rich colour of *Pleroma elegans*.

We next notice *Astrocaryum robustum*, *Thrinax jamaicensis*, *Dictyocaryon Wallisii*, *Corypha Martiana*, which resembles *Pritchardia Martiana*, *Geonoma zamorensis*, *Triaria costata*, and *Phytelephas Papigiana*, as being very promising, and beautiful Palms. There are several new *Marantas*, but we think them inferior to those we already have, although charming plants. An elegant plant for table decoration, with handsome digitate leaves, is called *Didymopanax Houletii*, and belongs, probably, to *Araliaceae*.

Messrs. Veitch & Sons exhibit a beautiful hybrid *Alocasia*, obtained by crossing *A. metallica* and *A. Lowii*. For three new plants they stage *Philodendron Pearcei*, beautiful, with bright green leaves, shaded with a velvety greenish black; *Pandanus Veitchii*; and the most elegant *Aralia Veitchii*, which is a superlative gem. They also exhibit in another class a fine broad red-leaved *Dracæna*, called *magnifica*, which is beautifully shaded with violet.

In this division are also a very creditable collection of *Selaginellas* from Belgium, and some new plants from M. Dalière, of Ghent, and some *Marantas* from some one in the neighbourhood.

These, with a few minor things, comprise this remarkable Show—remarkable for being held so early in a climate so inhospitable; remarkable for the managers forgetting that their alphabet is almost unknown to the rest of Europe; and remarkable for having induced even one of our amateur gardeners to subject his treasures to the risks attendant upon a journey by sea and rail of more than three thousand miles. We hope there will not be an attempt to have a similar exhibition at Tobolsk, the capital of Siberia.

CATS VERSUS NEMOPHILA INSIGNIS.

I AM glad to have found someone at last who can sympathise with me under the above nuisance. My experience tallies exactly with that of your correspondent, "PUSS IN BOOTS," save in once instance—viz., that of the cats eating the plant. I remember once introducing our own cat to a clump of *Nemophilas*. Her antics were most amusing. She would take a huge spring, and bury her head among the flowers, seemingly in an ecstasy of delight, and would then roll in them, occasionally taking a mouthful, which seemed to have much the same effect upon her as laughing gas upon a human being. After she had exhausted herself she would squat in the middle of them, the picture of contentment. I have not yet tried "ROBIN ROVE'S" novel suggestion, as, to tell the truth, the cats have not favoured me with their presence much lately.—A DISCONSOLATE VICTIM.

BIRMINGHAM ROSE SHOW.—We are requested to draw attention to an advertisement in another column, announcing that a change has been made in the days on which this Show will be held. The fixture is now Friday and Saturday, July 9th and 10th.

LATE FROST.—Near London the thermometer fell to 27° on the night of May 20th, with a cold easterly wind, succeeded by

bright sunshine. The effects were visible on Saturday; numbers of the young half-opened Strawberry blooms being destroyed, but nothing serious. The young shoots of Rhododendrons are killed; Pelargonium leaves and Vegetable Marrows scathed, but Potatoes uninjured.

ROYAL HORTICULTURAL SOCIETY.

MAY 22ND.

SPECIAL PRIZE AND PELARGONIUM SHOW.—Is there any person sceptical enough to doubt the popularity and capabilities of the Zonal Pelargonium? If such a one existed before last Saturday, I should imagine he has made a clean breast of it now and acknowledged his errors. There were to be seen in those abominable arcades (which one gets more and more out of temper with, for doing their very worst to spoil all the efforts of cultivators and managers by the wretched light they give), such a collection of these in their various classes, more especially in the Tricolor section, as has never been brought together before, sufficient of themselves to make a grand exhibition, and exciting the most lively interest amongst growers for sale and amateurs; while in the Council-room a number of our best growers were engaged in listening to an excellent essay by Mr. Grieve, the father of these beautiful Tri-colors, and to a discussion lasting over some hours, as to the method of growing, &c. No other flower but the Rose could stand such a strain upon it as this, and I must, therefore, conclude that the Rose and the Pelargonium are now the most popular of our flowers. Of this latter I have nothing to say, save that I am more than ever convinced that the term Gold and Silver Tricolors and Bicolors will cling to them in spite of all attempts to alter. I was somewhat amused to find one of our most distinguished growers, who advocates another name for them, when he became animated lapsed into Tricolors and Bicolors. Mentioning names reminds me that surely a gold medal ought to be given to the poetic genius who stood godfather to a large number of Tricolors. Can anything be more exquisitely charming than such names as "Love Me Long," "Eternal Spring," &c.? How cold and dead before such an amorous and poetic strain must seem the "Mrs." and "Mr.," and plain "Peter" and "Lucy."

Class 13, for a single Golden Tricolor, brought a very large number of plants into the field of competition, and occasioned a great deal of trouble to the Judges. The first prize was carried off by "Peter Grieve," exhibited by Messrs. E. G. Henderson & Son, having a leaf of remarkable roundness and with very few serratures; it was also remarkably high-coloured. The second prize was awarded to Carter's Prince of Wales, and Turner's Mrs. Healdy, plants so much alike that it would have defied, I think, their owners, if the labels had been changed, to have told their own. They are both very fine, handsome in colour, and very vigorous in habit. The third was awarded to Achievement, sent out by Mr. Turner, of Slough, this spring. It is also a very vigorous-growing kind. There were a large number of others, all very beautiful, but these seemed to be in advance of the rest. In Class 14, for a single Silver Tricolor, Mr. Turner took first and second with Excellent and Lady B. Brydges; and Mr. Coomber, gardener to Col. Wilkinson, Highgate, second, with Mrs. Col. Wilkinson. They were all fine, but I question whether in point of colour any of them exceed Italia Unita. In single Bicolors, the lion's share fell to Messrs. Downie, Laird, & Laing, who carried off first, second, and third prizes, and who certainly seem to have outstripped all competitors in this class. Their plants were W. Morris, Red Ring, and Impératrice Eugénie. In Golden-leaved Selfs, Mr. Turner was first with Pillar of Gold; Messrs. J. & C. Lee second with Golden Nugget; and Carter & Co., third, with Carrie Fowler. Truth compels me to say, I did not think any of them a great advance on those we have.

In Ivy-leaved Pelargoniums, the first prize was taken by Mr. Wimsell, with Wills's new hybrid, Willsii rosea, a distinct Ivy-leaved with a zonal flower, and of a most lovely salmon shade of colour. Mr. Wills is to be congratulated on his success, after fifteen years of hard work, in securing what is not only in itself good, but the forerunner of a new race of Pelargoniums. Mr. Stevens, of Ealing, was second with L'Elegante. In Silver-edged Pelargoniums Mr. Turner took all three prizes with Bright Star, May Queen, and Mrs. Cutler, all good, especially the first, which I saw and noted at the Crystal Palace. In Nosegays the first prize was taken by Mr. Turner with Fire King, a very bright and large-trussed variety; while in Zonals Messrs. F. & A. Smith carried off the first with a fine new salmon-coloured flower of large size and good form, Acme, a most decided advance. Mr. George Smith, of Edmouton, was second with Lord Stanley.

The competition in Class 21 for six Golden Tricolors was very close, and brought together a most beautiful lot of plants. The prize was taken by Messrs. Carter & Co. for admirable plants of Mrs. Dannett, a very smooth and bright-leaved variety; Prince of Wales, already mentioned; Sir Robert Napier, very dark, and distinct from all others; and Edith Stuart. Mr. Charles Turner was second with Lady Cullum, Mrs. Healdy, already referred to, Mrs. Turner, Sophia Cusack, G. Moreton, and Lucy Grieve, very much out of colour. Mr. Stevens, of Ealing, was third with capitally-grown plants, although, perhaps, not so bright in colour as the others, of Lucy Grieve, Sophia Dumasresque, Sophia Cusack, Lady Cullum, Mrs. Turner, and Countess of Tyrconnell.

In Class 22, for Silver Tricolors, Mr. C. Turner was first with Miss Stevens, Italia Unita, Excellent, Lucy, Mabel Morris, and Hou. Mrs. Falconer; Messrs. E. G. Henderson & Co. second with Silver Cloud, Charming Bride, Glen Eyre, Beauty, Italia Unita, Caroline Longfield, and Silver Star. Messrs. F. & A. Smith were third with Peri, Lady of the Lake, Caroline Longfield, &c. I have already noticed some of these, and, while all are very beautiful, it must be borne in mind that they are not so effective out of doors as in pots.

The Bicolors were very fine, Messrs. Downie, Laird, & Laing taking first with Red King, Crown Prince, Prima Donna, Mrs. Alan Townsends, Stanstead Beauty, and Harrison Weir. These were all admirable plants, exhibiting both the dark and light forms of zone; the former most effective for the house, the latter for out-of-door work, and were all raised by the exhibitor, most of them being sent out this spring. Messrs. Carter & Co. were second with Southern Belle, Ada, Danno, Cleopatra, Black Prince, and Egyptian Queen; Messrs. F. & A. Smith third with Tom Brown, Arab, Sybil, Criterion, The Moor, and Hannibal. Both these collections were excellent, and, indeed, it is very difficult to say which are the best. I incline to Southern Belle in Messrs. Carter's and Sybil in Messrs. Smith's, but all are fine.

Messrs. Downie, Laird, & Laing's Nougays were very large and grand plants, comprising Emmeline, Duchess of Sutherland, Countess of Strathmore, Rose Stella, King of Nougays, and Mrs. Laing; while Messrs. Standish & Co. had enormous plants of Gloire de Nancy, Capitaine L'Hermito, and Madame Lemoine, doubles.

I have but little space left to say anything about Roses, but assuredly Mr. Turner is to be congratulated that he has attained the very top of the tree, beating those who have so long been in the field. His plants were perfection for the style. Charles Lawson was grand in the extreme, each flower fit for a box of cut blooms, and so exquisitely fresh. The same may be said of Souvenir de la Malmaison. Anna Alexieff was good, so was Souvenir d'un Ami. He had, besides, Victor Verdier, Vicomte Vigier, Maréchal Vaillant, Paul Perras, and Juno.

There are one or two other matters about which I may have a say next week.—D., Deal.

ALTHOUGH the leading features of the Show were the Zonal Pelargoniums of various sections, and the Roses, which are above reported on, there was a large and very interesting display of other plants, including numerous novelties submitted to the Floral Committee.

The President's prize for the best nine Azaleas was taken by Mrs. Glendinning & Sons, of the Chiswick Nurseries, with large plants in fine bloom, among which were Extrane, Optima, Madame Mieliez, Iveryana, Eulalie, Duke of Devonshire, and Petuniaeflora. Extra prizes were awarded to Messrs. Lee, of Hammersmith, and Mr. Wilkie, gardener at Oak Lodge, Addison Road, Kensington, for well-bloomed specimens of Broughtoni, Coronata, Elegans superba, Magnificent, Duke of Devonshire, and other well-known sorts.

Of groups of fine-foliaged and flowering plants, the best came from Mr. Turner, of Slough. In this there was a fine specimen of Charles Lawson Rose, but far from equal to the dazzling plant of the same variety in the collection of nine, with which he gained the President's prize. He had also Iveryana Improved Azalea, in fine bloom, and among fine-foliaged plants large specimens of Aralia palmata, Pandanus utilis, and Dracæna australis. Mrs. Glendinning & Sons were second, and had a fine bushy Pimelea spectabilis, and a handsome Theophrasta imperialis. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., Regent's Park, and Mr. Willac, also exhibited neat groups in this and the class for six flowering stove and greenhouse plants, in which they were respectively first and second.

The Silver Flora Medal for six new plants sent out in 1867 or 1868, was gained by Messrs. Veitch, with Dendrobium Bensonian, a beautiful Moulmein species with white flowers, having an orange lip; Retinospora filicoides; Sanchezia colibis variegata, one of the most effective of variegated plants; the true Vanda insignis, not that which has hitherto passed under that name; Dracæna regina, a handsome broad-leaved variegated kind; and Aloesia Jenningsii, a fine specimen, with the black blotches contrasting beautifully with the green ground colour. The same firm also took the Bronze Flora Medal, or second prize, with a beautiful pan of Abutilon Thompsoni, Begonia boliviensis, Nepenthes hybrida, Acalypha tricolor, a fine addition to ornamental-foliaged plants, and of which a specimen was exhibited in one collection of these at the last Regent's Park Show; Phormium Colensoi variegatum, with narrow leaves edged with white, becoming red at the base; and the pretty, small-growing Davallia parvula.

Messrs. Veitch were again first and second for six new plants sent out in 1869. Their first-prize collection consisted of Croton maximum, beautifully veined and spotted with yellow, very handsome; Maranta tabispata, very striking by its small regularly-placed reddish chocolate blotches; Davallia hemiptera, a charming little dark green Fern; Dracæna Macleayi, with dark bronzy foliage; D. nigro-rubra, with red and bronze leaves; and Croton Hillianum, with foliage richly marked with orange and crimson. Messrs. Veitch's second-prize collection consisted of Darwinia fimbriata, with pleasing white flowers tinged with pink on the outside of the bells—this received a second-class certificate, a first being given to Leptopteris Wilksiana; Dieffenbachia Wallisii, with a white band along the midrib, and white markings; Maranta princeps, and chimbocensis, two handsomely-marked

kinds, especially the latter; and Croton aucubafolium, with the leaves marked with small yellow blotches.

Of a new plant shown for the first time in flower in Great Britain there was only one exhibition, that of Messrs. Veitch, who took the first prize, as well as a first-class certificate from the Floral Committee, for Dendrobium Jamesianum, with large white and orange flowers, which, when it comes to be grown to a larger size, will, no doubt, be a handsome addition to this highly ornamental genus.

The first prize for a new ornamental-foliaged plant shown for the first time in Great Britain, was also taken by Messrs. Veitch with Croton Hookeri, a magnificent plant from the New Hebrides, with the leaves of a most beautiful clear yellow in the centre, edged with green. The second prize was likewise taken by Messrs. Veitch with Dracæna magnifica, from the Solomon Isles, with very broad brownish red leaves. Both the above plants received first-class certificates, as also Canna Smithii, having yellow-variegated leaves, from Mr. Wimssett. Dracæna albicans, from Messrs. Veitch, in which the leaves are variegated with white, was also shown in this class, but it was not equal to D. regina; also Aloesia Sedeni, a hybrid raised between A. Lowii and A. metallica, having large handsome leaves of a metallic greyish green on the upper side, and purplish crimson on the reverse. A first-class certificate was awarded to the same firm for Dracæna Cheloni, from Banks Island, with bronze leaves edged with rich rosy red.

Messrs. Veitch were again first in the class for a new garden seedling in flower, with Rhododendron Lady Rolle, a flower of fine outline, white tinged with blush, with a blotch of cinnamon spots in the upper petals. Mr. Wimssett was second with Pelargonium Willsii rosea, one of the new hybrids between the Ivy-leaved and Zonal sections, having large broad leaves resembling those of the former, and deep rose-coloured flowers, with petals of fine outline. Both the above plants received first-class certificates from the Floral Committee. Mr. Wimssett also exhibited Willsii with handsome foliage, but the flowers not so large, nor of such good form; and Mr. Groom, of Ipswich, had also a hybrid Ivy-leaf, but not equal to either of the preceding.

Miscellaneous collections were very numerous. Mr. Bull took the lead with a large group of new and rare plants, of which the following received first-class certificates—viz., double Pelargonium Madame Marie Lemoine; Nothochloa candida, a pretty silvery Fern from Central America; Hyophorbe Verschoffeltii, a handsome Palm; Acer polymorphum palmatifidum, with handsomely-cut foliage; Enecephalartos grandis, and Latania rubra. Besides these, Mr. Bull had a large number of other interesting plants, as Demonoceros Lewisianus, Trestine acuminata, a promising plant, Enecephalartos Scottiana, Gazmannia fragrans, &c. Mr. Williams, of Holloway, likewise sent an excellent collection, including Cyrtopodium caudatum, Dendrobium densiflorum, Vandas, Cattleyas, Cyrtopodiums, and other Orchids; Metrosideros floribunda, covered with its crimson flowers, rare Yuccas, Beaucarneas, Zamias, Dracænas, and beautiful examples of Todea superba and pellucida. Messrs. Paul & Son sent a number of boxes of cut blooms of Roses, a fine collection of Roses in pots, and cut Rhododendrons and Ghent Azaleas. Mr. Noble, of Bagshot, contributed baskets of Rhododendrons, including The Queen and Duke of Cambridge, also Clematis Duke of Buccleuch, shown at the meeting of the previous Tuesday, together with a number of older kinds. Mr. W. Paul sent numerous boxes of cut Roses; one of the varieties, called Princess Christian, a new Hybrid Perpetual, a fine, full flower, of the colour of the Maiden's Blush, was awarded a first-class certificate. Mr. William Paul also contributed a large collection of Tricolor and Bicolor Pelargoniums; and Waltham Bride, a silver-variegated variety with white flowers, had a first-class certificate. Mr. Mann, of Brentwood, sent a collection in which Duchess of Abercorn, a large salmon rose flower of fine outline, and Illuminator, bright orange scarlet, of fine form, were awarded first-class certificates. Messrs. Standish & Co. and Messrs. Carter had each similar awards for double Pelargoniums Madame Marie Lemoine and Wilhelm Pfützer. The former firm sent likewise several seedling Rhododendrons, including Beauty, which had a second-class certificate at the meeting of the Floral Committee on the previous Tuesday; while Messrs. Carter had golden and silver Gymnogrammas, supposed to be hybrids, the one between G. calomelaos and G. Lauchena, the other between G. tartarea and sulphurea; also a group of Amaryllis and Tricolor Pelargoniums. Messrs. E. G. Henderson sent also a large group of Tricolors and Bicolors, and had a first-class certificate for Marie Lemoine, double-flowered. Mr. Pearson also sent some fine bedding varieties, as Reynolds Hole, Thomas Speed, and E. J. Lowe, but, unfortunately, much damaged by their long journey; also Tricolors Edith Pearson, a beautiful variety, but not in good condition, Major Ellisam, Miss Locker, and W. Sandy. Corporal Brown, R.E. Ordnance Survey Office, St. George's Road, Pimlico, was awarded a special certificate for two baskets of window plants, containing varieties of Tricolors of his own raising, one of which was the Hon. Mrs. Le Poer Trench, which he exhibited two years ago. Corporal Brown, by the excellent condition in which his plants were shown, has proved that he is as good a gardener as a soldier, and that on more than one occasion. Mr. Turner, of Slough, besides a fine collection of Tricolor Pelargoniums, sent several Show and Fancy kinds, of which Heroine, Herald, Agrippa, and Excelsior received first-class certificates, and a similar award was made to him for Rose Mrs. Woolfield, a pleasing, large and full rose-coloured variety, with a glow of bright salmon rose in the centre. J. H. Arkwright, Esq., also had a first-class certificate for climbing

Rose Duchesse de Mecklenburg, having a yellow ground suffused with salmon and purple, peculiar in colour. Messrs. Salter contributed a collection of ornamental succulents, in which there were several pretty Sedums and Sempervivums, also cut flowers of Pyrethrums; and Mr. Ware, of Tottenham, a collection of hardy variegated plants.

FLORAL SUB-COMMITTEE.—Rev. J. Dix in the chair. The certificates awarded at this meeting were as follow:—Messrs. J. Carter and Co. first-class certificate for double Zonal Pelargonium Marie Lemoine, a bright rosy pink; and a first-class certificate for double Zonal Pelargonium Wilhelm Pfitzer, a brilliant scarlet. A basket of nicely arranged cut trusses of double-flowering Zonal Pelargoniums was exhibited by the same firm, and was much admired; also two seedling Ferns—*Gymnogramma Lauchena gigantea* and *Gymnogramma Carteriana*.

Mr. Bull received first-class certificates for *Acer polymorphum palmatifidum*; a delicate Silver Fern, *Notholaena candida*; *Eucephalaria gnudis*, *Pychosperma nobilis*, *Latania rubra*, *Hyophorbe Verschaffeltii*, and double Zonal Pelargonium Marie Lemoine.

Mr. J. Wimsitt exhibited some very pretty seedling Ivy-leaved Pelargoniums; one, *Willisii rosea*, very beautiful in form, colour bright rose, a great advance in this section of Pelargoniums. To this a first-class certificate was awarded.

Messrs. Standish & Co. had first-class certificates for double Zonal Pelargoniums Marie Lemoine and Wilhelm Pfitzer. Mr. J. Mann, Brentwood, exhibited a large collection of seedling Zonal Pelargoniums of very superior character; but Lord Derby, one of his seedlings of last year, has so raised the standard of these varieties, that it is almost impossible to surpass that variety, and difficult to equal it in beauty. Two were selected for first-class certificates—viz., Duchess of Abercorn, fine form, salmon flower, and Illuminator, bright orange scarlet, a beautifully-formed flower, with petals of great substance.

Mr. Bye, gardener to J. H. Arkwright, Esq., was awarded a first-class certificate for seedling Rose Duchesse de Mecklenburg. Messrs. J. & C. Lee had a first-class certificate for Pelargonium Wilhelm Pfitzer.

Mr. C. Turner received a first-class certificate for a Show Pelargonium Herald, very dark mulberry with white centre; also for Heroine, a soft rosy-tinted flower with pure white centre; Fancy Pelargonium Arrippa, a light-coloured flower, and Excelsior, first-class; also for a new Rose, Monsieur Woolfield, bright flesh colour, very perfect in form. Messrs. E. G. Henderson received a first-class certificate for double Pelargonium Marie Lemoine.

Mr. Pearson, Chilwell, sent a very fine collection of seedling Zonal Pelargoniums, which, unfortunately, were much damaged in their journey to South Kensington; there were some very promising varieties, and the Committee requested that they should be submitted to them again.

Mr. W. Paul received a first-class certificate for Silver variegated Zonal Pelargonium Waltham Bride, a neat dwarf-growing plant producing white flowers. This will be found very useful for bedding and decorative purposes. Also a first-class certificate for a seedling Hybrid Perpetual Rose Princess Christian, pale flesh colour, a great acquisition among Perpetuals, and quite distinct.

Mr. H. Harman, Denham, Uxbridge, was awarded a first-class certificate for a large-leaved variegated Ivy-leaf Pelargonium, a very strong grower, very useful for rockwork. Messrs. Veitch received first-class certificates for *Rhododendron Lady Rolle*, a very fine flower of good form and substance, and delicate in colour; *Croton Hookerianum*, *Dracaena magnifica*, *Dracaena Cheloni*, *Leptopteris Wilksiana*, *Dendrobium Jamesianum*; and a second-class certificate for *Darwinia ambriata*.

THE VARIEGATED ZONAL PELARGONIUM ESSAYS.—As stated by Mr. Cannell, of Woolwich, in page 306, the sum of £5 was subscribed as a prize for the best essay on the Variegated Zonal Pelargoniums, which it was intended should serve as a basis for discussion at a meeting to be held in the Council Room, at South Kensington, at 11 A.M., on the day of the Show. The meeting was not so numerously attended as expected, owing, probably, to the exhibitors having been engaged to a later hour than usual in setting-up their plants, and afterwards in procuring necessary refreshment, and it was not till an hour after the time fixed that the proceedings began. The Rev. J. Dix having been called to the chair, Mr. Cannell's letters proposing the subscription for the prize, a list of the subscribers, and the names of the adjudicators were read. The adjudicators were Mr. Morris, of Deptford; Mr. Andrew Henderson, of the Wellington Nurseries, St. John's Wood; and Mr. F. T. Smith, of Dulwich, assisted by the Rev. J. Dix. Seven essays were sent in to them, and that of Mr. Peter Grieve, gardener to the Rev. E. R. Benyon, Culford Hall, whose name is so well known in connection with the subject, was selected for the prize; but after the selection Mr. Jonathan Smith, of the Jersey National School, sent an essay, which was considered to merit a second prize of £2. Mr. Dix said he had much pleasure in handing over the prize to Mr. Grieve, who, at the request of the meeting, then read his essay; and Mr. Dix having to attend to his duties in connection with the Floral Committee, deputed the chairmanship to Dr. Masters, who remarked, in inviting discussion, that anything that would show a definite means of increasing the hardiness of the plants and improve their colours, and the mixtures of these—that would take these matters from the region of chance to that of certainty, would be a boon.

Mr. Smith, of Dulwich, said he had very few remarks to make on Mr. Grieve's essay in a dissenting point of view, but he considered 2 feet from the ground to be quite high enough for the stage for the plants; and to have the plants in the best state for the winter, the last shift should not be later than the first week in August, nor should the pots be large. The sap and colour were then concentrated, and the latter remained unchanged till January. He recommended the plants to be kept moving slowly in a temperature of from 50° to 55° till March, and when growth began to shift not earlier than the end of February, or better the first or second week in March. The shifts might be large; he would not object to put a cutting in an 8 or 10-inch pot at once, provided care were used in watering. He would avoid rich soil and rask manure; all such he had discarded. The best soil was the top spit of turfy soil, laid up for from six to nine months, chopped roughly, and used in a coarse state. With regard to syringing, he considered the safest time to be not the morning, but between 3 and 4 P.M., when the weather was mild and dull, the sun having a disastrous effect on the wet foliage, and he would use a little fire heat to dry the leaves. As to the comparative strength of the issue of green-leaved and variegated female parents, the plants from the former were generally, but not always, the stronger; and those from the latter generally, but not always, the weaker. As regards future progress, he thought we should be able to obtain yellows yellower, higher-coloured zones, and blacks blacker, but he did not believe that we should be able to secure a striped-leaved variety. As an instance, he might state that he had raised one such, but the character was not permanent when he endeavoured to continue it by propagation. He had, moreover, found varieties raised from the same stock extremely variable, and he had at the present time three hundred seedlings equal to Mrs. Pollock which never would come out. He was no advocate of formality of the leaf, although a strong advocate of the circular outline in florists' flowers; he would also advocate convexity in the leaf, as the foliage then clothed the plant much better, and dust was more readily washed off than when the leaves were concave.

Mr. Denay remarked that the plants appeared to grow faster and be of better colour when afforded manure.

Mr. Smith had an antipathy to the use of manure, and though the growth might be stronger for a time, the plants were shorter-lived.

The Rev. H. Dombrain thought the dark-zoned varieties, though exceedingly beautiful in-doors, especially early in spring and autumn, did not do so well out of doors. As regards form, he did not despair of circular leaves; and as to temperature, he thought that of an intermediate house the best. He would not use the knife much, but would prefer to pinch the tops rather than cut.

Mr. Denny, referring to his previous remark as to manure, said he did not mean a very large amount of it. Mr. Dombrain thought the Bicolors would be more effective out of doors than the Tricolors, especially the brighter kinds, of which the broad zones became dull. After some conversational remarks by Mr. Laing, Mr. Smith, Mr. Dombrain, Mr. Grieve, and the Chairman, in which both Mr. Grieve and Mr. Smith stated that the white-flowered Pelargoniums proved failures as parents of Tricolor varieties, votes of thanks were passed to Mr. Grieve for his essay, and to Mr. Dix and Dr. Masters.

TYING-DOWN YOUNG VINE LATERALS.

PERHAPS your correspondent, Mr. W. Guildersfield (see page 79), and other readers of your Journal, will be interested to learn that I have practically demonstrated his mode of operation to be worthy of general adoption, inasmuch as I have failed to perceive the slightest ill-effect accruing to fruit-bearing laterals so operated upon; and the setting and swelling of the berries are as good as on those not needing such a summary mode of treatment to bring them into subjection. As an instance of the limits to which this seemingly barbarous mode may with impunity be indulged in, I may state that at the present time I can show examples in which the lateral was twisted and bent in the superlative degree, resembling an inverted V, and which apparently has not proved inimical to the proper swelling of the fruit; hence, I now never scruple to twist a lateral into subjection.

It may not be irrelevant to remark, that this treatment is diametrically opposed to the doctrine recently promulgated in the pages of your Journal by Mr. J. Simpson, of Wortley. I, however, coincide with his opinion relative to there being no necessity to bend Vine rods to induce an even break, and I recognise it only as a matter of convenience, and never adopt it in our late vinery; yet the Vines have even broken equally freely from the base to the top of the rods, and of this they afford undoubted evidence this season, although last year's crop of fruit was kept upon them later than usual, the last bunches being cut on the 26th of April, for a large dinner party, and they were nearly as plump and good-flavoured as they were two months previously.

Allow me also to advert to the bleeding of Vines. If I may judge from my own experience, coupled with that of others, notably that of an experienced local nurseryman of Barbarossa

[Gros Guillaume] Vine celebrity, whose invariable custom is to cut down pot Vines at any time during the rising of the sap, not, however, as a matter of principle, but from necessity, and who allows them to bleed unchecked, hence he entertains a complete disregard for artificial styptics, and when interrogated as to the philosophy of such vandalism, my friend refers you to the practice of a modern local Esculapius, now deceased, and withal a most successful Grape-grower, whose custom it was to cut a slice off the end of his Vine rods every morning during the rise of the sap to promote bleeding until nature could afford no more. I believe he adopted such a measure from the idea that it induced a more regular break of the bud. What say our vegetable physiologists to this flagrant contempt of styptical aid?—WM. GARDINER.

THE PORTABLE ORCHARD.

(Continued from page 344.)

If you desire larger trees than that represented in *fig. 22*, you must allow another tier or whorl of branches to spring from the central shoot, originating from just above the *d* of this shoot—that is, we must treat this portion of the stem just as we did the lower portion of it the year after it was grafted. We must cut clean off all the spurs on the central stem below *d*, and shorten the portion above, so as to leave seven well-developed eyes immediately above *d*. The new tier of branches springing from these eyes must be treated exactly as those of the first tier; and if a still larger tree is wished for, successive tiers may be formed at about every two years. Small trees, with two or three whorls of branches, may be easily formed by allowing the eyes of the previous year's wood to grow after each cutting-back. However, for potted trees two tiers will be found quite enough.

good tree in the course of another year or so; it is 12 feet high. I will proceed now to point out its defects, and the remedies I intend to apply. By discussing a few actual trees, I hope to make the mystery of training tolerably clear.

The lowest six branches have been tolerably regular in their growth, having been formed in the way previously described. The second tier, however, is not a very successful one; the central shoot has not been cut down low enough, when it was shortened in order to produce this whorl of branches, and the result is too great a distance between the branches forming the whorl. By leaving too many buds, branches did not grow from all of them, and in consequence some have grown just over others, so that some parts of the tree are too open, and others too crowded. The branch *m* has been made to fork in order to supply a shoot further round towards the left; the short line indicates the place where the cut will be made to remove the other half of the fork. When this amputation has been made, the second tier will be quite regular enough. Our next tier, *e*, is sadly deficient on the left-hand side, but two branches will be observed at *n*, that seem quite out of place; they have been allowed to grow in order to fill up the gap at *o*. The way this filling-up will be done is by cutting these shoots back to a little below *o*, in order to obtain two good strong terminal shoots from them. These terminal shoots will be inarched to the stem near *o* about the middle of August, so as to supply branches on each side of *o*. For two or three years these inarched branches will be shorter than the rest of the tier, and to encourage their growth, all the rest of the upper part of the tree must be kept from vigorous growth by close summer-pinchings, or cutting the leaves. These additional branches might be formed by side grafting, using scions with terminal wood buds; but the two branches at *n* are so well placed for inarching, that there can be no question of making use of them, for the new branches so produced will be far stronger than any from side grafts. As the tree is not intended to be allowed to grow any higher, the branches on the stem above the whorl at *o* will be cut as indicated by the short lines. In succeeding years the central shoot and the side branches will be shortened to within one or two eyes of the previous season's growth; this will leave an inch or two of new extension for each year. A good strong leading shoot ought to arise from each branch every season, and be permitted to grow up to the end of August, unless any of them are inclined to be rampant, in which case they must be stopped at an earlier date than the rest. Unless free growth is permitted to these terminal shoots the tree will not be productive.—W. KINGSLEY.

(To be continued.)

THE ARRANGEMENT OF CUT FLOWERS.—No. 1.

THE value of foliage, Ferns, and Grasses in the arrangement of flower vases is but little understood. The flowers themselves are frequently massed together, with no green to separate them from one another, or to relieve the effect of an indiscriminate mixture of colours. A few simple flowers elegantly arranged will contribute more to the adornment of a room than the most brilliant bunch of exotics put clumsily together; and even wild flowers when well arranged are by no means to be despised.

Single flowers, with a few leaves or a Fern frond placed here and there, in small glasses, have a charming effect and give very little trouble; but the larger the vase the more care must be taken in its arrangement. If a large vase with an open mouth, flowers with long stems will be found the most useful, and less foliage is required than in many other styles. A vase of this sort filled entirely with Grasses may be made to look exquisitely soft and lovely. A few ears of Wheat, Barley, and Oats, with a variety of Grasses—the finer sorts placed near the edges, and the heavier ones towards the centre—will be found a good arrangement; but each blade should be put in separately, in order to obtain beauty of form with great lightness. Care should be taken to leave no gaps, and yet the Grasses should not touch each other. A handful of flowers all alike, such as the *Dielys* or the *Fuchsia*, are easily arranged and are very effective. In shallower vases also, a group of *Primroses*, *Anemones*, *Pelargoniums*, &c., freely interspersed with foliage look very well, and are quickly put together, but when the flowers and colours are much mixed a more elaborate style is necessary.

Many beautiful vases are now made, consisting of a group of glasses, which almost secures a certain amount of lightness and elegance; but the exhibition vase, which is still a favourite, depends entirely on its arrangement for its beauty. Being

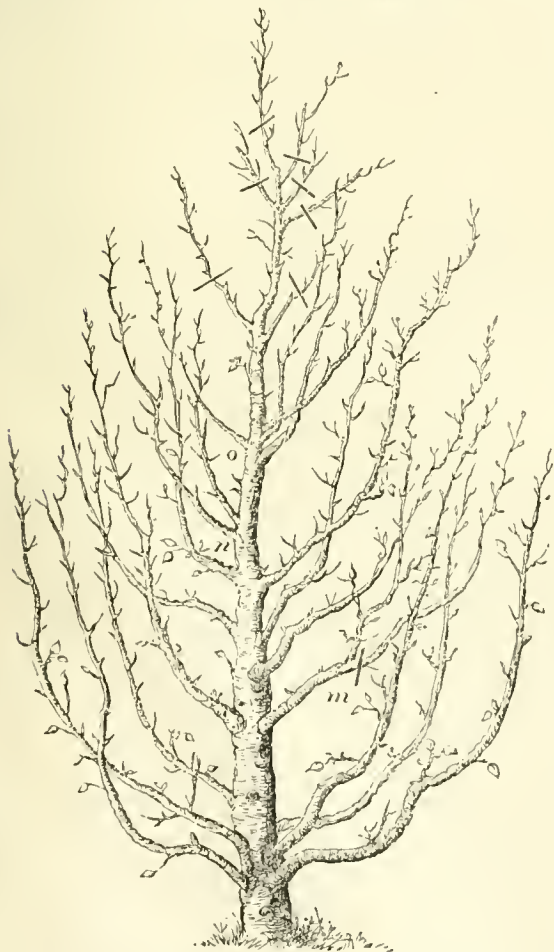


Fig. 23.

Fig. 23 is a sketch of a larger size with several whorls, not quite regular, but capable of being made into a very

generally too shallow to hold much water, sand covered with moss is an excellent way of preparing it and of preserving the flowers, if carefully watered every day. Ferns are almost indispensable round the edge of the bottom glass, and should be made to droop over the top one, and an elegant creeper should be twined up the stem. Then the chief care must be to keep a good round shape without stiffness while putting in the flowers. They should be raised towards the centre, and one side must not be higher than another. Plenty of foliage should be used, dark or light, blue or yellow-green, according to the flowers it is to set off. If some of the flowers are large and heavy, tiny flowers amongst the foliage will look well, and Grasses are always most useful in filling up gaps, and giving an airy appearance to the whole.

Flowers to be really well arranged should look so natural as to appear to be growing; but there is a great knack in the placing of them firmly yet lightly, and which is easily attained by practice and patience, joined to some amount of natural taste for this pretty and fashionable art.—L., of Laughton.

NEW ZEALAND SPINACH—EAST LOTHIAN INTERMEDIATE STOCKS.

A SHORT time ago some statement appeared in your Journal relative to the hardness of New Zealand Spinach. Allow me to add my testimony to this. I sowed a small bed of it last spring in the open air. The plants came up readily. They were allowed to seed and to stand until the frost destroyed them, when they were pulled up and the ground roughly dug over. In February last a great number of seedlings began to appear, but as I did not recognise them they were dug in when preparing the ground for other seeds. However, they again came through, and having made the second leaf I saw that they were the New Zealand Spinach, and transplanted a number to a new bed for this year's supply. These have stood 10° of frost within the last week without injury. The original plants were sown on a piece of ground sloping gently to the west, and at an elevation of 1150 feet above the sea level. I have transplanted a number into the woods, hoping to naturalise the plant.

One word more on Stocks. Many persons appear to be dissatisfied with the East Lothian Intermediate. These I have neither tried nor seen; but since the beginning of March last I have had plants of the ordinary scarlet Intermediate 2 feet 6 inches in diameter and 18 inches in height, with upwards of seventy spikes of bloom. Surely these ought to satisfy every one. Mine have been the admiration of all who have seen them. They were sown in April, 1868, used for bedding last summer, and potted-up in the autumn before the frost destroyed them.—J. D., Alston, Cumberland.

POOLEY'S INSECT-DESTROYER.

I HAVE been using this on Peach trees. Boil 4 ozs. of soap to the gallon of water, and syringe the trees at night. I recommend all who have not tried this to do so, having proved it to be the most effectual means of destroying insects, such as mealy bug, red spider, thrips, scale, and aphides. Plants may be dipped in or syringed with it, and their foliage will not be in the least injured, nor will any objectionable deposit be left on the leaves, as in the case of some compounds. Plants will grow fast after having been dipped in it, and Peach trees after syringing grow and look healthy. I think it a great boon to gardens.

Pooley's tobacco powder I have tried on plants as well as fruit trees, and I find, by dusting the trees overnight and syringing next morning, it destroys insects. After applying it to Roses and to greenhouse and stove plants one may walk through the house, and on returning a short time afterwards the insects will be found dead. After trying various modes of using it, I find the best is to dust the plants with it at night and syringe them next morning. The tobacco grains are very useful for fumigating, and cheap.—W. NEANE, the Rectory Gardens, Diss, Norfolk.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THIS is a good time to sow white Broccoli, to supply the table during October and November. It is also desirable to sow some Cape Broccoli in drills prepared after the manner of a

Celery trench; the seed to be dropped in patches about a foot apart, and the young plants to be afterwards thinned to about three plants in a patch. Sow a little more of Knight's Protecting, and a sprinkling of some very late spring Broccoli; it may serve to prolong the succession next spring. Cauliflowers sown now will also head in the autumn, and may be housed in cellars, sheds, or outhouses, and thus continued in use for many weeks in succession. Every attention should now be paid to Celery plants; they must have abundance of water in every stage. Those pricked-out from the seed-bed should have well-prepared beds, the surface of which, for 2 inches deep, should consist of well-rotted manure, soaked with water, and rolled or pressed level previous to pricking-out the plants. If the weather prove sunny they should be shaded with boughs. In order to have a constant supply of Endive, a sowing should now be made. Endive is generally sown too thickly. Another good sowing should be made in the first week of July, and a third towards the middle of that month, after which the plants will not attain full size. As soon as they are a few inches high some mow the tops of the leaves off with a scythe, cutting about one-third of the leaves away. This they do to stiffen the plants, and cause them to make more heart. It also enables them to bear transplanting better. A good breadth of dwarf and compact Cabbages may be sown for early Coleworts, also a bed of Horn Carrots. This is a good time for a liberal sowing of autumn Turnips, the Dutch or Stone are useful sorts for the kitchen garden. If the weather should become dry water late Cauliflowers abundantly, also Lettuces for salad.

FRUIT GARDEN.

Grubs and insects in other forms should be picked off fruit trees generally. Vines on walls or buildings must be attended to, as to disbudding, stopping, &c. Apricots must be well examined for the grub, and Peaches judiciously thinned of wood. Strawberry plantations must now have a final hoeing till after the fruit is gathered, as any stirring of the surface of the soil amongst them would, when the fruit is set, cause the sand to adhere to the advancing fruit, and prove very injurious to them. Where spent hops can be procured, cover the ground between the rows with these; they will keep the fruit clean, and they banish snails, especially in dry weather. Where spent hops cannot be procured, the best substitute is wheat straw.

FLOWER GARDEN.

Should the weather become dry, much care will be necessary in watering plants recently put out in masses. All plants intended for specimens on highly relieved beds should, when planted-out, have a hollow preserved round the stem, or rather on the upper side for a fortnight after planting; this will serve to retain water, and cause it to penetrate the soil in contact with the roots; if this be not done, the water in such raised ground runs off, and in doing this produces a puddled surface, under which the roots of no plant will thrive until the crust be broken. Let the young shoots of all old Fuchsia stools be thinned out to five or six. Attend diligently to standard Roses; constant disbudding is necessary at this period, also keep down suckers. Let every attention be paid to propagate reserve stock to fill gaps, and let that already rooted, or the remains of store pots, have kindly cultivation forthwith, in order to be ready to fill blanks. They should be kept in a shady border by themselves. If not already done, Dahlias ought now to be planted-out, at the same time supports for them should be put in, so that the roots may not be injured, which would probably be the case if delayed to a later period. Water and mulch the surface of the soil round the stems. Pansies may be struck under hand-glasses on a shady border. Polyanthus will require some attention, they are very apt to suffer from the attacks of red spider; during dry weather shade is absolutely necessary for their successful cultivation.

GREENHOUSE AND CONSERVATORY.

The conservatory should now be thoroughly relieved of all superfluous stock, for the reception of which tiffany houses will be found extremely useful. Nothing, therefore, will be required in show houses or structures of that kind, but to carry out a cleanly system of cultivation, and to introduce specimens from other houses or pits. Keep the atmosphere as moist as circumstances will admit. Ventilate thoroughly, and shade with thin canvas during bright sunshine. Attend to plants for autumn decoration, such as Japan Lilies, Chrysanthemums, Scarlet Salvias, Tree Carnations, and things of that sort. Give them plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the development of their branches and leaves. *Selago distans* is a useful plant which

must not be forgotten, it flowers freely, and requires nothing beyond a cold pit to grow in. The present will be found a good period for repotting or giving extensive shifts to early-flowering *Epacris* that have fairly commenced growth, such as the following varieties, which may now be expected to be in good condition for the operation—viz., *Epacris campanulata*, *E. impressa*, *E. purpurascens*, and *E. purpurascens rubra*. Young plants of *E. grandiflora*, and such other varieties as are intended to be grown freely, or for specimens, without being allowed to flower this season, should also have a liberal amount of room allowed their roots in due time. The most suitable soil is fibrous gritty healthy heath soil, not of a spongy, soft, or greasy nature. Take care to stand such plants when they are shifted in a wholesome situation, a cold pit is preferable, where they may be slightly shaded if requisite, and where the watering process may be under proper control. Such plants for some time after being newly shifted require particular attention in this matter, for if the soil at the commencement become soddened or soured, it will not be an easy matter to remedy this afterwards. Stopping and pinching out the tops of strong shoots, and establishing a sturdy uniformity of growth must be particularly attended to throughout their growing season; by this means an abundance of fine blooming wood will be secured for the following season's flowering. Winter-blooming Heaths and *Cytisuses* should likewise be cultivated in quantity, for few plants surpass them for winter decoration. The atmosphere of all plant houses can scarcely be kept too moist at this season. Sprinkle every available surface frequently, and syringe growing stock lightly twice a-day during bright weather. *Achimenes* for late-flowering may be brought on gently in cold pits, as well as many other plants likely to be required for autumn and early winter decoration. If a canvas screen is used for shading from bright sunshine, some of the *Orchids* in flower, especially those found to stand cool treatment, may be removed to the conservatory for the sake of prolonging their beauty. Continue to clear away exhausted specimens in order to give place to *Pelargoniums*, *Calceolarias*, *Roses*, or other gay flowers now in perfection.

STOVE.

Take all possible precautions to avoid insects, remembering that in this as in most cases, prevention is better than cure. *Stanhoopes* in baskets should be well examined or fine flower spikes may be lost through coming in contact with the sides. Let the house have a thorough circulation of air early in the morning, regulating the amount by the warmth of the atmosphere. Continue to shift young growing stove plants, and to remove plants pushed on early for autumn and winter flowering to the cool shelves of the greenhouse, in order to harden their wood, and prepare them for early excitability.—W. KEANE.

DOINGS OF THE LAST WEEK.

FRUIT GARDEN.

Strawberries are coming into bloom. A few of the forwardest, like *Calceolarias* unprotected, have been touched as respects the bloom buds by the morning frosts, which told all the more when following showers in the afternoon and evening. Those slightly forced are doing well. We lately took an hour to go and see them at Stockwood before they were gathered for a particular occasion. There was a row of Keens' Seedling in 5 and 6-inch pots, without saucer or anything to stand on, that was very good, and two rows of *Empress Eugénie* that were very fine. The *Empress* is just a huge Keens', or rather a giant Sir Harry. Some find fault with the flavour, which is a little acid, but it is a fine-looking fruit. What may most interest our readers is the following:—The plants were not potted early, they had nothing particular as to strength or size of foliage; they had been started in a mild hotbed until they showed their flower trusses, when they were removed to the shelves, were watered with weak sheep-dung water at times, and after setting, had all the smaller fruit and redundant flowers thinned-out, leaving from four to six or more fruit to a pot. We used to thin ours with good effect, but have rather neglected doing so for some time, as we found the small fruit useful for other purposes—as creams, ices, &c. We regret now that in our hurried visit we did not request Mr. Dewsbury to weigh some of the finest of the *Empress Eugénie*, and even to weigh the whole of the berries in a certain sized-pot.

ORNAMENTAL DEPARTMENT.

As we do not like to stand alone, we were so far gratified to

find that Mr. Dewsbury had not commenced bedding-out, but had the most of his plants growing temporarily in trenches. We may do a little before this appear in print, but we should like our stiff ground to be warmer and mellow. We are also making some of our beds into a kind of raised baskets. Some of these, such as an avenue of beds, were planted in the pyramidal form. When cutting the grass with a machine the outside row was always in the way, unless a small space of earth was left between the plants and the lawn, and that bare earth was anything but pleasant to the eye. To remedy this we have had beds raised from 12 to 24 inches at the sides, covered with Ivy, &c., and besides repairing these, we are now doing some more with sides 8 or more inches above the lawn level. Many materials may be used for this purpose, but we like nothing better than poles and pieces of rough wood, from 2½ to 4 inches in diameter, using similar-sized pieces for the same bed. To avoid the trouble of pointing we cut the pieces level across at both ends, and set the bottom ends level and ram it firm, keeping the top ends level. Thus, for an outside of a circle 8 inches high the pieces of wood should be about 16 inches long, so as to stand firmly in the ground. By thus cutting the ends square, the smaller end of one piece and the wider end of the next can go in the ground alternately. This keeps the sides more regular. It matters little how rough the wood is, as that will soon be concealed by Ivy, *Cerastium*, Moss, *Saxifrage*, *Sedums*, &c., and thus present an evergreen outline all the winter. Flints, &c., do well enough when concealed, but cannot easily be made so neat and uniform as these pieces of wood. Had we our choice we would prefer larch poles; but we are using soft wood not suitable for hurdles or rails, and it will last a long time, as the covering not only conceals but binds all firmly together, even when the wood decays. The few inches left between this raised edging and the grass, if objected to as earth colour, may be easily coloured black, white, red, &c., with washed coal, chalk, brickdust, gravel, spar, bottle glass, slate chips, &c. These beds, raised thus at the sides, and the raising material concealed, are quite different from piling stones, bricks, &c., in the centre of a lawn and dignifying such excrescences with the name of rockwork, &c.—R. F.

COVENT GARDEN MARKET.—MAY 26.

QUITE an unusual falling-off in the demand during the past week, much of the forced produce being in excess, *Strawberries*, *Peaches*, and *Nectarines* especially. A large cargo of West India *Pines* has arrived in fine condition, and nearly a thousand boxes of *Strawberries* from France have found a market here during the last few days, bringing from 4d. to 6d. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons.....each	5	0	15	0
Apricots doz.	3	0	4	0	Nectarines.....doz.	12	0	24	0
Cherries.....lb.	1	0	3	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	15	0	30	0
Currants..... ½ sieve	0	0	0	6	Pears (dessert) .. doz.	0	0	0	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs.....doz.	12	0	20	0	Plums..... ½ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries .. quart	6	6	1	0	Strawberries.....lb.	5	0	8	0
Grapes,Hothouse..lb.	6	0	10	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	3	0	6	0	Lettuce.....score	1	0	1	6
Beans, Kidney ..hd.	1	0	1	6	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Mustd.&Cress,pannet	0	2	0	3
Broccoli.....bundle	0	0	0	0	Onions.....bushel	12	0	14	0
Brns. Sprouts ½ sieve	0	0	0	0	Parsley.....sieve	3	0	4	6
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	2	0	4	6
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	3	0	6	0	Kidney.....do.	4	0	7	0
Celery.....bundle	1	6	2	0	Radishes doz.bunches	1	0	0	0
Cucumbers.....each	6	0	1	6	Rhubarb.....bundle	0	4	0	6
Endive.....doz.	2	0	0	0	Shallots.....lb.	0	0	1	6
Fennel.....bunch	0	3	0	0	Spinach.....bushel	2	0	3	0
Garlic.....lb.	0	3	0	0	Tomatoes.....doz.	2	0	3	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	4	0	6
Horseradish ..bundle	3	0	5	0	Veget. Marrows..doz.	0	0	0	0

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BACK NUMBERS (*A Constant Reader for Many Years*).—The number published on March 25th is not out of print. If you enclose four postage stamps with your address, you will have it sent by post from our office.

SEEDLING ZONAL PELARGONIUM (*E. B. M. D.*).—We do not see that it is a zonal; but, whatever it is, we cannot undertake to name the varieties of florists' flowers; they are too numerous, and so slightly differing.

PEARS WITH PERSISTENT COROLLA (*H. B.*).—The Pears will not be injured by the petals remaining longer than usual.

CLASSIFYING COLOURED-FOLIAGED PELARGONIUMS (*B.*).—We consider Pelargoniums Model, Perilla, Luna, Beauty of Oulton, Gaiety, Nostess, or any others belonging to this section, variegated and eligible for exhibiting as Variegated varieties in company with any of the Mrs. Pollock section. The above are considered variegated by all competent judges. In reply to your second question, we consider they may be exhibited as Variegated Zonal Pelargoniums, but not in accordance with the section to which Madame Vaucher and The Clipper belong. If there were separate classes, set apart for the type of Pelargoniums to which your question chiefly refers, we would suggest that they should be called the Bronze and Gold section, and the Mrs. Pollock class should be designated as Golden Tricolors, and the section of which Italia Unita is the type Silver Tricolors; but we may again state, in order that we may be clearly understood, that two or more of each of the above sections, if exhibited together in a group, must to all intents and purposes be called variegated.

BLACK FUNGUS ON ROSE LEAVES (*S. E. C.*).—"I have examined the Rose leaves sent. They are attacked by the black fungus, which is not occasioned, like the blackened Rose leaves out of doors, by atmospheric changes. Cut off all the diseased leaves, syringe the trees well, and let them have plenty of air, and, if dry at the roots, a thorough watering, so as to reach all the points of the roots. If a little weak liquid manure be given, it may greatly help the plants to put out new leaves. Do not remove any other leaves than the diseased ones. If the trees are hopelessly affected, shake them out of the soil, fresh pot them, and then you may remove all the leaves."—*W. F. RADCLIFFE.*"

CURLED ROSE LEAVES (*C. B. Godalming*).—The recurving of the leaves you forwarded is caused by the rupture and contraction of some of the sap vessels on the under sides of the leaves. From the ruptured vessels sap exudes, forming a kind of honeydew, and then soon appear the green aphides to feed upon it and to increase its outflow. We believe it to be caused by sudden and violent transitions of temperature, and that it would be prevented by syringing the foliage early, before the sun shone upon it. We should also apply weak liquid manure to the roots of the trees, and keep them mulched.

ROSES (*Q. Q.*).—"It is the frequent, but not invariable habit of *Maréchal Niel* to grow long, scraggy, and leafless. I have three plants now in fine bloom of that character. Perhaps when the weather becomes warmer they may break into leaf better. Charles Wood is a hard opener. When it blooms it is a good representation of Louis XIV.; it is a better grower. I still keep three plants of it, but shall discard it in the autumn if it do not bloom more freely. I have seen, in the number of years I have had it, but one successful bloom. Its colour is blackish blood. Lord Clyde is scarlet crimson on opening, but becomes of a darker crimson. It is a good grower. The first-named specimen sent you is right, the other may be right. Till the plant be established you cannot tell by the foliage alone. Due de Cazes is, on opening, brilliant crimson, and then becomes fine purple crimson, dying off in hot weather coppery crimson. It is free, abundant, and continuous in blooming."—*W. F. RADCLIFFE.*"

CHERRY (*R. Walpole*).—It is the Bird Cherry; in Scotland called the Hog Cherry, but botanists now include it among the Plums, and call it *Prunus padus*. Formerly they called it *Cerasus padus*.

POTATOES TUBERING WITHOUT SPROUTING (*J. Robinson*).—If you refer to page 249, you will see that it was stated at the Royal Horticultural Society's Fruit Committee, that it is generally complained of this year.

MOWING SLOPES (*T.*).—They may, when not too steep, be mown with a mowing machine; but your slope is much too steep, and you will therefore be obliged to use a scythe. To mow well with a machine the face of the slope should be twice the perpendicular height.

DESTROYING SNAILS (*Decon*).—We do not know of any better plan than strewing dry fresh lime over the ground at dusk in the evening of showery days, and it will destroy all it falls upon, and, repeated a few times, will soon clear a garden of them and their even more ravenous ally the slug. Their natural enemies, birds, ought to be preserved, nothing being more their scourge than the thrush. Cabbage leaves form good baits for snails and slugs.

APPLYING SALT BETWEEN GROWING CROPS (*Idem*).—You could not apply salt between rows of Peas, Beans, Carrots, &c., even if actual contact be avoided, without running the risk of destroying the crops as well as the weeds, for the roots of the vegetables will extend for some distance into the spaces between the rows; and it follows that what will kill weeds will destroy the crops, excepting such as naturally are sown in maritime positions, as Asparagus and Sea-kale, to which salt, unless in very excessive quantity, is beneficial.

KIDNEY BEAN FROM CHINA (*The Master's Gardener*).—The Beans sent us we are not able to recognise. They very much resemble the China or Robin's Egg, but from your description we think they must be a running sort of that variety of Kidney Bean, and might not inaptly be termed China Runners.

GUANO WATER TO NEWLY-POTTED CAMELLIAS (*Idem*).—Do not apply guano or any kind of liquid manure to plants newly potted, and do not keep the soil more than moist until the roots are working freely in the fresh soil, then water freely; but guano water or liquid manure ought not to be given until the pots are filled with roots, and then at alternate waterings.

FERTILISING WISTARIA SINENSIS (*T.*).—We could not verbally make ourselves sufficiently clear to enable you to understand. All we can say is, that the pollen must be taken from the stamens and applied with a camel's-hair pencil to the stigma of the pistil; but the process is a difficult one, all the pod-bearers being different of fertilisation. The seed is not, that we are aware, in any seed catalogue, nor do we know of an instance of seedling in this country. We should be obliged to those having seen it in seed in this or any country, if they would state the fact.

STOPPING VINES (*J. C. L.*).—Stop the shoots one joint beyond the fruit; and the laterals should be stopped at the first leaf, and he kept pinched in to one leaf as often as the growth is repeated, which will give you plenty of foliage, and is better than allowing a great growth and then

trimming half or more of it away. No more than one bunch ought to be left on each shoot, the best for size and form, cutting the others away, doing it immediately the berries are set. The leader or rod should be stopped when it reaches the top of the house; and you may, it being within 3 feet of the top of the rafter, take one bunch from the leading shoot of each vine.

PEACH LEAVES BLISTERED (*Idem*).—The leaf sent us is blistered, but is not ulcered, as is frequently the case. It is a result of cold weather occurring after warmth, or hot dry days and cold nights, which cause rupturing of the sap vessels. There is no remedy but to give increased warmth by thicker covering. However, pick off now the worst infested leaves, and syringe the trees in the morning with water.

GOOSEBERRY TREE APRIS (*Idem*).—The best remedy is to dust with tobacco dust made from duty-free tobacco, which you will see advertised in our columns.

PEAR LEAVES BLISTERED (*S. H. W.*).—We think your Pear leaves are attacked by the Pear-tree blister moth (*Tinea Clerckella*), a minute moth that deposits its eggs upon the leaves, and when hatched penetrates beneath the cuticle, and, feeding upon the parenchyma, numerous brown pimples or blisters are produced. The only remedy will be to wash the tree with soapsuds, 2 ozs. soft soap to a gallon of water, applying it with a syringe twice a week up to the end of June. In autumn all dead leaves should be removed and burned, digging the ground about the tree.

TREES TO SHADE PONDS (*A. G. F.*).—The most suitable trees to plant near ponds are Willows; the Huntingdon, Common Weeping (*Salix babylonica*), and Kilmarock being most suitable. They will, however, shed their leaves, which will to some extent foul the water, but not seriously.

ASPARAGUS CUTTING (*T.*).—We have found it desirable not to allow any shoots to run up, not even weak ones, in the early part of the season of cutting, as when that is the case the shoots that are allowed to run draw all or most of the food collected by the roots, or it goes into them, and the eyes that would start into growth remain dormant, and the beds do not produce nearly so many heads as if all the shoots were cut as they appear. By cutting all we call into growth the eyes that would otherwise remain dormant, and these almost invariably form the largest and best heads, which it is our ambition to secure by cutting away the weak as well as the finest heads until the second or third week in May, or even the fourth in cold seasons, when we allow one or two shoots to run up from each crown. The case is different when all the shoots are cut as they appear to near the end of June. The roots are then so exhausted that there may not be sufficient vigour or eyes left to furnish good strong shoots, and unless there is good haulm this year the prospect of heads next year will be extremely small. We have seen beds cut so hard and late, even into July, that the plants have not been worth keeping afterwards, not giving a head fit to gather for the next three or four years, and sometimes not then.

FERNS IN CASE MOULDY (*S. E. C.*).—It would be impossible for us to tell the reason of the Ferns becoming mouldy without seeing a specimen.

ERICAS TO BLOOM IN MAY AND JUNE (*J. E.*).—*Cavendishii*, *Ventricosa magna*, *Ventricosa grandiflora*, *Ventricosa superba*, *Ventricosa alba*, *Perspicua nana*, *Albertii*, *Tricolor elegans*, *Tricolor Devotiana*, *Tricolor inflata*, *Tricolor major*, *Beaumontiana*, *Massoni major*, *Victoria*, *Essoniana*, *Candolleana*, *Candidissima*, *Tortuliflora*, *Aristata major*, *Fairriana*, *Holfordiana*, *Ferruginea major*, *Gomifera elegans*, and *Picturata*.

SELECT EPACRIS (*Idem*).—The *Bride*, *Impressa*, *Impressa alba*, *Queen Victoria*, *Eclipse*, *Grandiflora rubra*, *Delicata*, *Lunata major*, *Mrs. Pim*, *Princess Royal*, *Miniata splendens*, *Hyacinthiflora*, *Lovii*, *Alba multiflora*, *Ardensissima*, *Carminata*, *Levigata*, *Ornatul*, *Vesuvius*, *Rubella*, and *Exoniensis*. To have them flower at the time you name (March to May), they will need to be wintered in a cool airy house, and retarded as much as possible.

COMPOST FOR OAK-LEAVED PELARGONIUMS (*Carolus*).—The best soil for the scented-foliaged Pelargoniums is two parts sandy loam from turves, one part sandy fibry peat or leaf mould, and one part old cow dung, with a free admixture of sharp sand, the whole well mixed, and good drainage being provided.

PANSY PROPAGATION (*Alpha*).—The young side shoots should be taken those that rise from the neck or collar of the plant, as the old hollow stems seldom strike freely; cut them immediately below a joint, trimming off the leaves half the length of the cutting; insert them in a compost of two parts turfy light loam chopped fine, one part leaf mould, and one part sand, all well mixed, placed 6 inches thick, and in that put the cuttings, so that they may be clear of each other. Give a gentle watering, and cover with a hand-glass or frame, keeping it rather close and shaded from bright sun until the cuttings are rooted. Any time from the beginning of March to the beginning of September is a good time for putting in cuttings, but the beginning of August to the beginning of September is, perhaps, the best for raising plants for next year's blooming.

TAKING UP RANUNCULUSES (*Idem*).—It is not desirable to leave the roots in the ground the whole year. They should be taken up and dried when the foliage begins to decay, and stored then in dry sand in a cool place until planting time.

PROTECTING CELERY FROM WORMS (*Cottage Gardener*).—The only plant that we know of keeping off worms is to earth the plants with ashes or sawdust, but the former is best. They will not do any harm in the soil, and they will not long remain in it, the plants being well watered with liquid manure (2 lbs. salt or soda, and 2 lbs. guano being placed in 30 gallons of water, with 1 peck of soot added and well stirred up), employing it in dry weather two or three times a week alternately with water.

MELONS NOT SETTING (*J. L.*).—We think the bottom heat too high; 70° to 75° will be quite warm enough to have the soil, and the top heat should at night fall to 65°. We advise a good watering to be given, making holes and pouring the water through a drain tile, so as not to wet the surface much, or more than can be helped, and admit air early, not being sparing of that. Maintain a temperature of 60° to 65° at night, admitting air at 75°; allow the temperature to rise with sun and air to 85° or more, and closing when it falls to 80° and is not below 75°. Keep the shoots rather thin, stop them one or two joints beyond the fruit, and impregnate the flowers.

PRUNING NEWLY-PLANTED CHERRIES (*Suburban*).—We prefer pruning

or shortening back the shoots, so as to secure a vigorous growth the first year, and especially for wall trees, doing it by February if it is not done in November. In the matter of pyramids it is not so material, and, indeed, if they were properly summer-pruned such winter pruning is not necessary, but is positively injurious, the object being to keep them close and compact. The object of winter pruning is to secure growth, that of summer pruning to restrain growth and promote fruitfulness. We presume you have a sufficiency of shoots on the trees against the walls; train them in their full length, and you can, by now shortening the leader, secure shoots at the places where you wish for additional shoots to cover the wall, stopping all the shoots, except the extension of each branch, at the third leaf, and to one afterwards throughout the season. The pyramids we should stop at the fourth or fifth leaf; and the leader, if the tree is under 4 feet in height, when it has grown 9 or 10 inches.

PROTECTING CHERRIES FROM BIRDS (*Idem*).—The best material that we have used is herbage netting; but tiffany, which you have by you, will answer, putting it on when the cherries are swelling and becoming red.

BAROMETER AND THERMOMETER (*Mrs. Keating*).—Write to Messrs. Negretti & Zambra, Hatton Garden, London, E.C., and tell them what you need, and ask the prices.

SOFTENING HARD WATER (*Idem*).—The hardness is usually caused by the carbonate or sulphate of lime being dissolved in the water. It may be rendered soft by mixing a tablespoonful of washing soda with each bucketful of the water, and leaving it exposed to the air for twelve hours. The water so treated will do for watering plants.

IXIA CULTURE (*C. R. H.*).—The pots should be placed out of doors in summer, plunging them to their rims in the ground or in coal ashes, supplying with water in dry weather, but not after the foliage begins to decay, as the moisture of the soil will be sufficient. Pot them at the end of September or beginning of October, watering at planting; let them be freely watered for a month or six weeks, so as to encourage free root-growth; and keep them plunged in coal ashes in a cold frame or pit, pulling off the lights day and night when the weather is mild, protecting from heavy rains by drawing on the lights, and in frosty periods protecting with mats or straw over the lights, and removing the plants to the greenhouse in spring, assigning them a light and airy position.

SEEDLING CYCLAMENS (*Idem*).—At the end of this or beginning of next month place the plants out of doors, but shaded from the midday sun, keeping the soil moist; and at the end of August pot them in 4-inch pots, and place in a cold frame on coal ashes, keeping them well supplied with water, but not with the soil saturated. The lights only should be used in case of heavy rains, and then air should be freely admitted by tilting the lights. In October the plants may be potted into 6-inch pots, still keeping them in the frame, and protecting from heavy rains and frost, and removing to a light and airy position in the greenhouse before severe weather occurs. Any plants that grow vigorously may be shifted in November into 7 or 8-inch pots. The plants will flower next winter or early in spring.

BANKSIAN ROSE NOT FLOWERING (*Idem*).—The situation is probably too cold, and the plant too freely pruned. The shoots should be trained their full length, and not very closely together, removing no part at the winter pruning beyond the unripened portion of the young shoots, as the flowers are produced on laterals from the previous year's shoots.

TACONIA VAN-VOLXEMI NOT FLOWERING (*Idem*).—The plant should have the shoots trained not further from the glass than 9 inches, and better if 6 inches only. It should have a moderate amount of air, encouraging by copious waterings a free growth, training the shoots moderately thinly, so as to secure to them plenty of light. A good growth

being made, keep the plant dry both at the roots and in the atmosphere. Your plant may be a seedling, and in that case it will not flower until its vigour be overcome by confining the roots.

COMPOST FOR LOGANIA FLORIBUNDA (*An Amateur*).—Two parts sandy fibrous peat, one part turfy peat, and one-sixth each of silver sand and charcoal in pieces from the size of a pea up to that of a hazel nut for large plants, not taking out the dust, the whole to be well mixed and incorporated, providing good drainage.

FUCHSIA LEAVES DISCOLOURED (*A Subscriber*).—The leaf sent has begun that discoloration which will end in the fall of the leaf unless the cause be removed. That is the failing to give air before the sun shines powerfully upon the house, so as to dissipate the condensed moisture on the leaves, for the sun shining powerfully upon them whilst wet causes their discoloration. It is not caused by overwatering; avoid that, yet keep the foliage from flagging.

FLOWER BORDER (*Paz*).—Your arrangement will look very well if the season is moist enough to keep the yellow in the Pyrethrum. If not, yellow Calceolarias or Mrs. Pollock Pelargonium would be better.

HEATING A HOUSE FOR BEDDING PLANTS (*Jobbing Gardener*).—You should have told us the size of your house. If it is from 30 to 40 feet long, two ventilators in the roof and two in front will not be sufficient. You would need four at least, unless on a warm day you set the door open. The command of more air would be better as to heating. A fire is no trouble if well managed, and a small fire would do for such a place. If expense is an object, we would put a small brick stove inside the house, say in the middle, cover with an iron plate or a flagstone, and take the smoke out at the back, or up through the roof. Such a stove with a square top to put a vessel of water on is the cheapest and the best of all where only a little heat is wanted, and we consider brick stoves better than iron, as they never heat so quickly, nor cool so quickly. If you give more particulars we shall be glad to assist you.

WHITE DUST ON FORCED STRAWBERRY PLANTS (*Charlie*).—We think your Strawberries must be mildewed, and dusting with sulphur and more air might have remedied the evil. The other question—the plants for bouquets in winter and spring is a large one, and we will keep it in mind, but for garnishing, grow in the stove Mosses and Ferns, particularly Maiden-hairs, and such plants as Euphorbia jacobiniflora, all the smaller-foliaged Begonias, pink and white, which work up well; and in the greenhouse, besides double-flowering Primulas, which are invaluable, grow Mignonette, sowing in August, winter-blooming Heaths, Epacris, Correas, Acacias, Genista, Cytisus, Scarlet Pelargoniums, and those florists' Pelargoniums as Alba multiflora and Dennis's Alma, which come on with little forcing. The Swiss Forget-me-not also comes in very useful.

SEEDLING CALCEOLARIAS (*W. E.*).—They are prettily but not uncommonly marked; and that is all that we are able to say of them, for the post-office punches had quite flattened them, and they were packed in a cottony or woolly material, which is the worst of all for flowers. They should be in a stout box and in moss.

ASPARAGUS SHOOTS PERFORATED (*E. P.*).—We have failed to detect any workings of insects within the stems of the Asparagus sent, nor could we find any, under a microscope, on the exterior of the diseased part. Are you clear that the mischief is caused by insects? If so, please send a few separate, as the stems sent had become rotten, and may have destroyed the insects sent, if any.—J. O. W.

NAMES OF PLANTS (*W. Scott*).—Pilea muscosa, the Pistol or Artillery plant. (*Mrs. Phelps*).—It is Rhododendron Edgeworthii, a native of the valleys of the inner ranges of the Sikkim-Himalaya Mountains, at about 8000 feet above the sea level.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 25th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 19	29.626	29.389	53	34	54	50	S.	.22	Densely overcast; thunder, lightning, and hail; densely overcast
Thurs.. 20	29.649	29.535	69	18	53	50	N.W.	.00	Cloudy and cold; dense clouds; clear and fine.
Fri.... 21	29.793	29.678	65	44	51	50	N.	.00	Clear and fine; cloudy; densely overcast.
Sat.... 22	30.041	29.9 8	62	37	53	50	N.W.	.00	overcast but fine; overcast; cloudy and cold.
Sun.... 23	30.041	29.987	66	43	55	51	N.W.	.00	Fine, slightly overcast; cloudy; heavy clouds.
Mon.... 24	29.909	29.780	68	51	55	52	S.	.00	Clear and fine; very fine; cloudy; overcast, slight rain.
Tues.. 25	29.733	29.578	70	52	58	54	S.E.	.10	Overcast, very mild; fine, cloudy; slight rain.
Mean	29.828	29.694	63.57	41.14	54.14	51.00	...	0.32	

POULTRY, BEE, AND PIGEON CHRONICLE.

BEDLINGTON POULTRY AND PIGEON SHOW.

THE fifth Show at the above place was well managed. The birds were shown under a well-secured tent, and though the day was wet, yet the fowls did not suffer. They were well attended to, fed, and watered.

The first-prize *Game* cock was a capital bird, and ran the Brown Reds hard for the cup. Some of the most attractive Duckwings proved crooked on handling, but the first-prize pen was of excellent quality. The Golden-spangled Hamburgs were excellent and numerous, but except the winners the Silvers were poor. There were several noteworthy pens of Golden-pencilled, but only the first and second prize Silver-pencilled were worthy of notice. *Dorkings* were bad; but the *Cochins* were numerous and well shown, and the *Brahma Pootras* were even better. The first and second-prize birds in the *Spanish* class were handsome, and the cup was given to the first. Most singularly the barndoor fowls were a failure. The cottagers' class was well filled, and three extra prizes were awarded.

In *Game Bantams* the cop went to a good pen of Black Reds, hard-pressed by a handsome pen of Duckwings from Mr. Robinson, the only fault of which was, that the cock showed a little weakness of the tail, doubtless from want of condition. The hen was a gem. Some good birds were shown in the "Any variety" class for Bantams.

Aylesbury Ducks were capital, as were also the Ronen. In the "Any variety" class, Pintail were first; Brown Call second; and Gargany Teal, third; with Dnn Divers highly commended.

The *Guinea Fowls* were excellent; the first Coloured, and the second White.

In *Pigeons*, the first-prize Carriers were a handsome pair. The first-prize Almonds were neat in head, but a little dull in the feather. The Blue Ponters in the first-prize pen were more like two cocks than a pair proper; but the second-prize Whites, though they did not show, were handsome birds. Good Owls there were none. Where are the exhibitors of English Owls? surely there is an opening for them. The cup for Pigeons fell to a capital pair of Yellow Turbits. In *Jacobins*, the first-prize Whites were such as are rarely seen, and will, doubtless, be heard of again. This class was generally good. Mr. Yardley's Yellow Barbs in the "Variety class" were properly placed and a nice pair of Black Magpies were second.

In *Rabbits*, the first and second prizetakers were good in lop ears, but the Himalayan in the "Variety class" were not perfectly marked. We published the prize list last week.

RABBITS AT EXHIBITIONS.

MANY of your subscribers in Hull were greatly pleased with Mr. Rayson's letter under the above heading in your issue of the 13th inst., where he justly complains of the frequent absence of any notice of the Rabbits in the published reports of the poultry shows. There is an instance of this neglect on the part of somebody on the very page where this letter appears, and, indeed, I was looking in vain for some mention of the prize Rabbits at the Epworth Show when that complaint met my eye, and yet twelve lines were devoted to the names of the winners in the cage bird classes. It was a still greater disappointment and source of wonder to find no notice whatever of the prize-winners of Rabbits at the Hull Poultry Show last week, where there were sixty-one pens, containing the picked Rabbits of England, fifteen prizes, including cup and medal, given, and I myself heard the Judge (long experienced in these matters) remark that there had never, perhaps, been so large and choice a collection of Rabbits brought together in this country. Everybody knows that it is an expensive hobby and does not pay the most successful exhibitor, in a pecuniary sense, but it is encouraging and gratifying to his innocent vanity to see his name in print if a winner, and very mortifying not to be able to learn who has beaten him if he go to the wall. I observe that occasionally there is a notice of Rabbits at small shows where four prizes are given, and not a dozen pens entered, and it would be esteemed a favour by myself and a number of your other subscribers here, and doubtless hundreds elsewhere, if you would kindly add a footnote enlightening us on what appears a strange anomaly.—B. HUDSON, *Hull*.

[The following are the awards made to Rabbits at the Hull Show:—

Black and White, or Grey and White.—1, W. Allison. 2, T. Ingham. c, C. King. *Yellow and White, or Tortoiseshell*.—1 and Cup, B. Hudson. 2, J. Sykes. *hc*, A. H. Easton; H. Yardley. *c*, T. Ingham. *Self-colour*.—1, A. H. Easton. 2, F. Stainburn. *hc*, T. Ingham; — *White*; W. Allison. *c*, S. Hall. *Himalayan*.—1, J. Butterworth. 2, J. R. Jessop. *hc*, S. G. Hudson. *c*, S. G. Hudson. *Other Varieties*.—1, A. H. Easton. 2 and *hc*, S. G. Hudson. *Selling Class*.—1, S. Hall. 2, T. Ingham. *hc*, T. Strayton; B. Hudson. Silver Medal, F. E. Thompson.]

THE SHEFFIELD ORIGINAL FANCY RABBIT SOCIETY'S SHOW.

THE fifteenth half-yearly Show was held on the 17th inst., when the largest and best stock of Fancy Rabbits that was ever exhibited was shown. Prizes were awarded as follow:—

LENGTH OF EARS.—1, W. Allison. Length of ears, 22½ inches; width 5½ inches. Age 5 months 10 days. 2, W. Allison. Length of ears 22½ inches, width 5½ inches. Age 5 months 19 days.

BLACK AND WHITE.—1, W. Allison. Length of ears, 21½ inches, width, 5 inches. Age 3 months 14 days. 2, H. Frith. Length of ears, 21 inches, width 4½ inches. Age 4 months.

GREY AND WHITE.—1, H. Platts. Length of ears, 19½ inches, width 5½ inches. Age 4 months. 2, H. Platts. Length of ears, 19 inches, width, 4 inches. Age 5 months.

TORTOISESHELL.—1, W. Allison. Length of ears, 21 inches, width, 4½ inches. Age 5 months 10 days.

BLUE AND WHITE.—1, H. Platts. Length of ears, 18 inches, width, 4½ inches. Age 2 months 7 days.

SELF-COLOUR.—1, H. Frith. Length of ears, 21½, width, 5 inches. Age 4 months 4 days. 2, G. Moore. Length of ears, 20 inches, width 4½ inches. Age 4 months 4 days.

WEIGHT.—1, G. Moore. Weight 10 lbs. Age 6 months. 2, B. Marshall. Weight 9 lbs. 12 ozs. Age 7 months.

Messrs. Allison and Platts contributed greatly to the breeding stock, including Allison's Champion, said to be the longest-eared Rabbit in the world, measuring 23½ inches and 6 inches wide, and his splendid pair of Black and White, winners of some of the principal prizes in England.

ALMOST SIAMESE-TWIN CHICKENS.—I have recently had a brood of chickens hatched, and among them was one with four legs, four wings, two perfect bodies, and one head. It died before the hatching was complete, and I have had it preserved.—W. BARFOOT, *Queen Street, Kettering*.

AYLESBURY DUCKS.—An Aylesbury Duck laid such a large egg on the 13th inst., that I weighed it and found it 8 ozs. Two Aylesbury Ducks have laid 234 eggs since January 1st.—F. W. B. B.

EARLY SWARMING AT WATERBEACH, CAMBRIDGESHIRE.—Mr. Aspland, of Rosemary Hill, Waterbeach, head gardener to the Rev. W. Wilson, had a very fine swarm on the 21st of April.

Mr. J. Denson, jun., Florist, &c., High Street, Waterbeach, had a fine swarm on the 25th of April.

STRENGTHENING STOCKS.

I HAD two good swarms of Ligurians, but tried to strengthen one of them at the expense of the other by changing the stands, which did not answer, as one of them killed the bees as they returned home, consequently it is so weak that it is useless.—S.H.G.

[Changing places with stocks should only be done when the bees are busily at work in the middle of a fine day, when honey is coming in rapidly. At such a time we are assured on excellent authority that the populations of strong and weak stocks may in this way be equalised with little or no risk of a mishap.]

MY DOGS.—No. 5.

MY DOG WHEN I BECAME A RECTOR.

Dogs seem capable of two kinds of strong attachment—attachment either to the horse they live with, or to some one member of a family, usually their master. You may also notice that if the love is strong and warm the dog is no Fenella, but one of a high degree of intelligence. As to the dogs of the common caste of nature, they eat and drink, obey you, like a walk, and are grateful for it, and there all ends. That is the history of their lives from year to year.

But among dogkind as among mankind, Shakspeare's canon holds good:—

"Nature hath meal and bran."

An observant eye which has watched the world for some years detects easily enough the bran. That boasting, coarse-minded man, rich he may be, fairly educated he may be, prosperous he may be, yet for all that you see at once he is but of Nature's "bran." So, too, that vulgar-minded woman, who wears her gaudy clothing like a clotheshorse, but in spite of her apparel's costliness is yet not a gentlewoman. She, too, is of Nature's "bran;" while, on the other hand, that quiet, true, gentle man, who winces and shrinks under the broad stare and loud talk of Mr. Vulgarian Pluto, is readily recognised as being of Nature's "meal." And that quiet-demeanoured woman, who welcomes you with a smile and soft voice, who would have just satisfied Ben Jonson's wish when he said—

"Give me a look, give me a face,
That makes simplicity a grace;
Robes loosely flowing, hair as free.
Such sweet neglect more taketh me
Than all th' adulteries of art:
They strike mine eyes, but not my heart."

She, too, as you see at once, is of Nature's very finest "meal."

Now, as I before said, just as among mankind, so among dogkind, "Nature hath meal and bran." A dog of high intelligence is of the former class, and he has always a very warm heart; but in this class there are degrees. One such dog forms the warmest attachment to his stable-sharer the horse, which he will welcome with joy, whine for when absent. Sometimes he will lie on his back; at other times the horse will, in a sort of stupid loving way, put down his long kind head for the dog to lick his face. As the two do not by nature partake of similar food there is no quarrel over the dividing of provender. Such a dog I have known, who was wont to bring his stable-friend an apple from the orchard as a little love-gift and token. But the highest-class dog of all is the one who loves with wonderful depth and warmth—depth seen in his eyes, warmth felt in his caresses—his own master. Such a dog you see in Sir Edwin's picture "Auxiliary." A noble Newfoundland is sitting on the extreme point of the pier, with his master's plumed hat kept safe beneath one weighty foot, while his eyes are looking from his bent head far into the waves beneath, asking the sea to give up the beloved form, or to tell, Is my master safe, or is he lost? Or that other picture, where the shepherd dog is laying his head on his master's coffin in a state of loving grief, he so soon to die of a broken heart.

Of such an affectionate dog I have now to speak. She was a terrier, not of the rough Scotch kind, at one of which *Punch* represented a London City Arab looking, and saying, "Which is 'is' head and which is 'is' tail?" though much may be said for the docility and intelligence of such. No, Fanny was an English terrier, black and tan.

But I must tell all in proper order. One bright Sunday morning in late spring or early summer, that best of times in the West of England, I was crossing the road from my church to my rectory. To the church I had been, country parson-like, to look round and see if all was right for service to begin half

an hour after, while the chiming of the bells of near churches, whose service begins earlier than mine, was falling pleasantly on my ear. I had been standing a few minutes before on the sunny slope of the churchyard, lost in admiration, looking at and delighting in the rich wide view beneath—the sweep of the park close below, the stately elms, broad oaks, and prim chestnuts, down to the humbler thorn bushes. I had been noticing the nearer trees in their first clean pure spring dress; then I had watched how, farther off, the trees lost individuality, and blending to the eye formed one high thick wood, and farther still, where along the horizon, half indistinct from a summer mist, “a pale stream,” I could just trace the whole line of the road up those downy slopes miscalled *Salisbury Plain*. Having watched, and loved, and listened to bells and birds (oh, what a sweet calm time is a summer Sunday morning!) I had roused myself from this delicious reverie, and had left “God’s acre.” Each year is that beautiful burial ground more endeared to me—to me, an old resident—for more and more loved parishioners lie beneath as years succeed each other. In the act of crossing the village lane, elm-shaded, a pure English-bred black and tan terrier raised its intelligent head for a pat. I saying, “You are the very dog I should like,” “You may have her, sir, if you likes to buy her,” said a one-eyed, rather doubtful-looking man, who was off, like too many artisans, for a Sunday walk during church time. Explaining to Cyclops that Sunday was no day for purchase or sale, I take down his address, again pat the dog, notice and admire her large, bright, trusting eyes, and determine if possible to free her from the tyranny of that one-eyed, ill-favoured being who was now her master. “Six o’clock to-morrow night, and don’t come earlier, as I sha’n’t be home sooner.” “All right. What is your dog’s name?” “Fanny.” A christian name, thought I, and the dog first seen on a Sunday.

The next evening at the time appointed I was at the house of Cyclops, a poor house in a back lane of a manufacturing town, low-ceilinged and close-aired. How different, alas! are the town dwellings of the poor from my village cottages with fresh air and good gardens. A timid woman (is Cyclops a cruel husband?) received me and bade me be seated. Presently Cyclops came in, even less prepossessing in his workday garb than in his Sunday suit—Cyclops, not, indeed, one of Vulcan the blacksmith’s workmen, but his near kin by looks, for he was stained blue with cloth dye. He leads the way to a little back yard, high-walled and filthy, where was Fanny tied by a rope which had worn through the skin of her neck. She was a beautiful, glossy, black and tan creature, in all the litherness and grace which a well-bred terrier has when a year old, before the form is widened and made bulky by age. I longed to release the dog from such a prison and such a galling chain. “How did Cyclops come by the dog?” “It was given I by a lodger a fortnight ago.” “Where did lodger get her?” “From Squire Dash’s keeper.” Stolen, thought I. Cyclops does not ask an exorbitant price, and in five minutes the dog is bought and paid for. One of my two boys, quite little boys then, and very eager for the dog, produces a light chain and collar, and we are off with our prize, Fanny buoyant, loving, and delighted, as if foreknowing the many happy years she was destined to spend with us.

Arrived at home, it seemed the dog’s delight to win every heart; but still from the first, as if she knew it was I who freed her from her misery, she was to me devoted—she was my dog especially, only fully happy when lying at my feet. Still, I had the fear upon me that she was stolen, and that I should have to give her up to her rightful owner; but it proved in the end that Cyclops’ tale was correct. She had been the on-too-many at the gamekeeper’s lodge, and she was given by him to a friend, who valued her so little, or feared the tax-gatherer so much, that in a fortnight’s time he left her with Cyclops.

Fanny proved to be of Nature’s very finest meal. She was known for years by a clerical neighbour as “the christian dog,” partly from her christian name, but chiefly from her nature, so kindly, and gentle, and loving. People who were not usually fond of dogs were struck by and pleased with Fanny. I have said she was of the brightest black and richest tan. Unfortunately, she had been subjected to the cruel process of cropping and docking, so ears and tail were not as Nature made them; but her eyes told her character, and attracted attention. The eyes of some terriers are brown of various shades; hers were glittering coal-black balls, with a liquid lustre, as like as possible to a gazelle’s as a dog’s eyes could be in shape, colour, and prominence. Fanny, happily, adapted herself to her company; with the children she played hide-and-seek, enjoy-

ing the game thoroughly. When they went blackberrying she went too, and all her share plucked by herself. From me she would never willingly part. When I was writing she lay at my feet, and looked up now and then to make sure I was there and then she dozed off secure and happy. Whither I went she went. She was prime playmate with the young ones, even to the youngest that could not toddle, but could sit and pull her tail. There is an engraving seen sometimes in print-shop windows of a terrier, at least of such a dog’s head and neck, with a face full of intelligence—that, save the white throat, which my dog had not, is just like Fanny.

I could never bring myself to make Fanny a kennel dog; she had felt the galling chain of Cyclops, she should never know mine. So she had full range. Soon she grew to understand where I was going. If a felt hat was on my head she knew it was only for a stroll in the garden; if a stick in my hand, she knew it was for a parochial stroll, and she went into every cottage, hurting neither child nor cat. If I had on that detestable thing (why are Englishmen slaves to it?), a high hat, called by boys, aptly and rightly, a chimney-pot—for it is as hard on the brow as if made of pottery, and as ugly as a chimney-pot—then Fanny knew it was for a long walk, a call, perhaps, and she was extra happy, leaping to my hand and bounding by my side. At first she was much puzzled by Sunday. Poor dog! she had not “ever been where bells have knolled to church.” At the kennels in the wood, where she had passed her puppyhood, she had heard the sweet music of the church bells, doubtless, but had no association with them, and knew of no duty connected by man with them. When in the possession of Cyclops, he never went to church, so to him and her Sunday bells were as nothing, eave connected with a walk in the morning; or, perhaps, she thought of them only in connection with kicks from a drunkard’s foot in the evening. So when Fanny saw me high-hatted and dressed for church while the bells were ringing, she thought she had a right to go out with me. But soon she learned to know the day. I was wont to look at the dog, point to my gown and bands, and say, “Listen to the bells, Fanny, it is Sunday;” and she retired to her sleeping-box in the kitchen. After mastering her lesson, which she soon did, nothing would induce her to go out on her accustomed barking runs round the house and garden on a Sunday, until the afternoon service was over. She knew the day as well as we knew it. Once she was sorely puzzled; that was by the first funeral which took place after I had her. She knew it was not Sunday, but the bell was going, and I went over to church. Very much perplexed, and not knowing what to make of it, she committed her one fault, for when she saw me in the churchyard she jumped through the window of my study in order to get to me, though cutting herself sorely in doing it. Upon being punished she kept the house at funerals as well as on Sundays and at other service times.

Fanny had some recommendations to favour, which terriers seldom have: thus, she swam, hence she was beautifully clean; then she never would eat raw meat, and cared most for bread and milk, so she was scentless—a great comfort in a house-living dog. When accidentally lost in the town near, she would either remain on the door step of the house she last saw me in, or place herself at a point which commanded a view of divergent roads. I was wont occasionally to stay at a house where was one of the most snarling, ill-tempered creatures, half terrier, half Italian greyhound, called toy terriers; and when its mistress’s back was turned I used to avenge myself upon the ill-tempered, ill-conditioned (not in body, far from it), ill-bred little brute, by saying to him, “Well, Mister Tiney, Dr. Watts said some dogs will go to heaven; but on my word as a clergyman, I assure you that you will not be one of them.” But if the fond dream of the little doctor is ever realised, and some of the animal creation be for ever happy with redeemed man in the second paradise, as they were happy with unfallen man in the first paradise, it must be that such dogs as Fanny will be there. Her devotion to me was shown daily; if left alone in the house she lay on my chair, or on my bed; but it was in an illness of mine that my heart was most drawn out towards her. And is it not also true in regard to human friends, that companionship in scenes of sorrow makes the truest friend? The boon companions of the spendthrift, where are they when he has spent all and begins to be in want? Gone! What is the worth of the friendship of the drunkard’s jovial choice cronies when the drink is out? Nothing. But if you make a friend in scenes of sorrow—a friendship springing up first, perhaps, from sympathy shown—then, whenever you meet that one, there is a special pressure of the hand, a

special glance from the eye, which could not have ever been had the friendship begun in the gayest scene the world ever saw. Sorrow shared consecrates friendship. Also the sympathising letter written by a friend to us when we are in trouble, secures our hearts more than a thousand merry epistles, for we then feel his value. Thus, too, I never knew Fanny's full value until sickness became my guest. The dog was restless, and would get into my room. By the way, I should have remarked that she had learned to knock at a door and gain admittance by thumping her short tail against it, making an excellent imitation of a tap, tap. Well, she, though repeatedly driven down—she, the gentlest and most obedient of dogs, would come up-stairs, and she would and did get into my room, then on the bed, and there she would remain. But to describe the scene further—to give a photograph of it, I must use the words, the better words of another. Mrs. Browning, one, surely, of the first poets of this century, both in heart and intellect, once received from a friend, Miss Mitford I think, the present of a dog, who became her faithful companion during some years of "that long disease, her life." Her account of the attention and love shown to her by this dog during a severe illness just portray Fanny's conduct to me under similar circumstances. Glancing at the silky beauty of other dogs, she comes to her own, and says, looking at him—

"But of thee it shall be said,
This dog watched beside a bed
Day and night unwearied;
Watched within a curtained room,
Where no sunbeam broke the gloom
Round the sick and dreary."

"Roses gathered for a vase,
In that chamber died apace,
Beam and breeze resigning.
This dog only waited on,
Knowing that when light is gone,
Love remains for shining."

How exquisite are those two last lines, and how true, as thousands of sick rooms bear witness.

Then the poet goes on comparing the life of other dogs to the life of her devoted dog.

"Other dogs in thymy dew,
Tracked the hares and followed through
Sunny moor or meadow—
This dog only crept and crept
Next a languid cheek that slept,
Sharing in the shadow."

"Other dogs of loyal cheer
Bounded at the whistle clear,
Up the woodside hieing—
This dog only watched in reach
Of a faintly uttered speech,
Or a louder sighing."

"And if one or two quick tears
Dropt upon his glossy ears,
Or a sigh came double—
Up he sprang in eager haste,
Fawning, fondling, breathing fast,
In a tender trouble."

I must again break the course of the poem to note the wonderful power and truthfulness of the last three lines of this verse. No words ever, I think, so exactly showed the different manifestations of love in trying to comfort, which are peculiar to a dog. No artist could give them, for a painter could not, of course, give motion, whereas the words can and do.

"Up he sprang in eager haste,"

active electric movement—

"Fawning, fondling, breathing fast,"

three kinds of motion so quickly following, consecutive, but not co-existing, and then the finishing touch—

"In a tender trouble,"

affection predominating, prevailing over grief.

Then comes the poet's last descriptive verse—love perfect and secure, and resting—

"And this dog was satisfied
If a pale thin hand would glide,
Down his dewlaps sleeping—
Which he pushed his nose within,
After—platforming his chin
On the palm left open."

No words of mine could so exactly tell Fanny's winning, loving ways when I was on my sick bed, no words of mine could half so well tell them. When I grew gradually better and began to walk with a tottering feeble step, I was accompanied by Fanny. Soon I had to halt—resting, then walking a little further; Fanny paused as I paused, and walked on as I walked on.

Fanny lived with us for many years, considering the shortness of dog-life. Her death was tragic. She was fond of a gun, and did her part well in sport; but, alas! one wretched 1st of April, "*dies ater*," the contents of the barrel went into the dog instead of the inferior animal. Even in dying she was herself, for she raised her head, gave one look, which went to the heart of the shooter. Her look said plainly, "I know it is a mistake, and I quite forgive you." Oh! that wretched 1st of April! what a flood of tears was shed; what a household of mourners we were; but in vain the tears, the mourning—the bright-eyed Fanny was bright-eyed no more, but she lives in the tenderest remembrance of us all. Fanny was the last of "my dogs." The last, at least, who has lived and died with us, for I must not forget you, Dash, handsomest of liver and white spaniels, faithful guardian of my home; but you are living, so you cannot have as yet a biographer.—WILTSHIRE RECTOR.

OUR LETTER BOX.

ANDALUSIAN CHICKENS (*H. L.*).—We believe the breed to be "composite," and therefore subject to return to the parts that originally formed it. Black and white would be among them. You were prepared for it by the letter of the seller, who very candidly told you what you might expect. It is not uncommon for these light birds to get darker, and the dark ones to become lighter, till they reach a neutral tint.

BRAHMA POOTRAS PARTLY FEATHERLESS (*J. B. C.*).—They eat each other's feathers. We know, to our cost, there is no cure for it but giving them their entire liberty, unless there be some satisfying food we have not yet discovered. There is no doubt it arises from a morbid and diseased state of body, and it is curious from the fact that the patients stand still and submit to being plucked alive with as much patience as though it were a pleasurable operation. They are also epicures in their way. They begin with the duff—we suppose the light down tickles their palate—then they eat the hackle, and at last, "*faute de mieux*," they eat the saddle feathers. The only approach to a cure has been to rub the bare spots freely with bitter ointment.

DUCKS AND FOWLS TOGETHER (*Parson's Wife*).—Ducks and fowls to be shown in June need not be separated, so far as sexes are concerned; but Ducks and fowls must not be kept together either for their well-doing, or for exhibition. Their habits are too dissimilar. It is fairly open to doubt whether the eggs are barren from the cause given; but the risk is so great at this time of year, we should advise you to change the cock for another. If you have room enough for your chickens do not shut them up. They require extra food because weight is essential, but it is too expensive to feed a yard at that rate. If you cannot give them separation and liberty, you must shut them up for a short time, or you must increase your average feeding, and trust to beauty of feather and perfection of condition to make up for any deficiency in weight. Goslings and ducklings may be killed at from sixteen to eighteen weeks old.

ADDRESS (*S. Thorne*).—We never state the address of correspondents; all questions must be sent to our office. Every week we require a notice to that effect.

HEN'S FEATHERS BRITTLE (*T. J. W.*).—The plumage is worn out and brittle at this time of year, and the nakedness you complain of is caused by the attentions of the cock. Remove him, and the feathers will come again. It is also almost certain you would not be a loser by the separation.

ANTWERP PIGEONS, &c. (*St. Edmunds*).—Do not feed your birds before teaching them to fly; they will come home the better, and be rewarded by a good feed. At the same time, let them not fly on a long fast. We fear your hen Pigeons have "rot feather;" let them have exercise, variety of food, the bath, and separate them from their mates for a few weeks. They should also have gravel, loam, salt, and mortar mixed, to pick at.

GREY PARROT (*Idem*).—Feed your bird on Indian corn well boiled, biscuits soaked in milk, the latter not quite cold, different seeds, nuts, and any grain occasionally. Be sure to give no animal food, not even a bone to pick. He should have gravel at the bottom of his cage. We recommend milk as above rather than water. Do not over-feed or under-feed, but notice what your bird takes; fresh food is best.

CANARY AND RABBIT SHOWS (*H. Ball*).—From your communication prognosticating the decay of the shows we entirely differ. They are increasing in number and improving in management. Committees are more careful in selecting judges than they were two years since.

PRESERVING PEAS (*S. A. K.*).—Pick them when full grown, shell them, dry them gently but thoroughly, and then store them in canvas bags in a dry place. When required for use soak them in water for a few hours until plumped up, and then boil them.

SILK WORMS' EGGS (*Cuniculus*).—They are of no use if kept until the year following that in which they were produced. The price of the cloth covers for our volumes is 1s. each, or free by post 1s. 3d.

SWARM SETTLING ON THE GROUND (*Carolus*).—The queen doubtless dropped on the ground unable to fly, owing probably to some defect in her wings, and being there discovered by the bees, the swarm settled where she had fallen. We do not fancy you did much good by adding to them the cluster of bees in the bell-glass, since all, or nearly all, of them would return to their parent hive the first time they quitted the new domicile to which they had paid so involuntary a visit.

WAX MOTH (*S. S. Ware*).—In the Woodbury, and indeed in every description of moveable comb hive, nothing is easier than to effect a cure by lifting out the frames, examining the combs, and destroying all the larvae of the wax moth. We are, however, inclined to believe that the colony is really suffering from foul brood, which is a much more serious matter. We should be the better enabled to judge of this if you would give particulars of the history of the stock, and we should also be glad if at the same time you would communicate your address.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 3-9, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				
3	Th	Royal Horticultural Society's Great Show. [Second Day.	70.2	44.2	67.2	21	50	af 3	6	af 8	21	af 1	41	1	24	2	9	154
4	F		68.4	44.4	66.4	15	49	3	7	8	41	1	41	1	24	1	50	155
5	S	Crystal Palace Show.	71.5	47.4	59.0	24	49	3	9	8	1	2	47	2	25	1	49	156
6	Scn	3 SUNDAY AFTER TRINITY.	70.6	47.6	59.1	22	48	3	10	8	23	2	54	3	26	1	38	157
7	M	Meeting of Entomological Society.	63.2	46.8	58.0	26	47	8	11	8	46	2	5	27	1	27	158	
8	Tu	Meeting of Royal Microscopical Society.	70.6	46.6	58.6	15	47	3	12	6	12	3	11	6	28	1	16	159
9	W		70.7	47.4	59.0	20	46	3	12	8	42	3	19	7	29	1	4	160

From observations taken near London during the last forty-two years, the average day temperature of the week is 70.1°; and its night temperature 46.3°. The greatest heat was 90°, on the 6th and 7th, 1846; and the lowest cold 23°, on the 6th, 1856. The greatest fall of rain was 1.48 inch.

SUMMER-PINCHING, OR STOPPING THE GROWING SHOOTS OF FRUIT TREES.



THIS all-important operation in fruit-cultivation now requires attention. It is a practice which has often been advocated in your columns in a very clear and able manner by Mr. Rivers and others; and my only reason or excuse for advertizing it here is, that frequently in the pressure of other work at this season it is apt to be delayed and forgotten until too late. Trees grow so fast at this season that, if not seen to for a week or so, one is astounded

at the progress they have made, and then the knife has to be used so unmercifully that no wonder the trees suffer through it. And, again, a good thing cannot be too often repeated. It is well, I think, to give frequent reminders of all important operations in their due season in horticultural journals. That, in fact, is the end and aim of your "Work for the Week" and "Doings of Last Week," which, although gardeners are not very fond of owning it, I know have often done good service.

But to return. The time for pinching the growing shoots of fruit trees—Apples, Pears, Plums, Cherries, Apricots, and I may include Peaches, although these last require somewhat special treatment, excepting in the case of orchard-house, bush, and pyramid trees—is now at hand; and if success is expected to attend the operation, constant supervision is now necessary.

The advantages of a correct system of pinching are obvious to everyone. The work is easy and simple, and if done now little or no pruning will be required in winter. By closely following it up the vigour of the tree may be moderated and regulated, so as to make every part fruitful alike, and with few exceptions the most stubborn trees may be made fruitful by this simple operation. All cannot be treated exactly alike. Some are of more robust growth than others, and consequently require a little more liberty of action, and a more frequent application of the process is necessary than with slower-growing trees. No exact rule of procedure can, therefore, well be laid down; very much must necessarily be left to the operator's discretion. The operation should be performed when the shoots are young and tender, when they will readily snap off with the fingers.

All formally-trained trees, whether on walls or in the open quarter, must be kept in trim by the use of the thumb and finger at all events; and the principal rule to bear in mind is this—Pinch the strongest shoots first, and only these, which are in general situated at the top of the tree; then in the course of four or five days repeat the operation with the next strongest lower down, and so on in succession until all have been done, and then begin at the top again, and so on as required. Never denude the tree of a great quantity of foliage at any one time, as by so doing a check is given which might prove injurious. Pinch the most vigorous portions of the tree the hardest, and allow the weaker to grow a little longer. Thus the shoots at the top of a Pear tree on a wall should be pinched to two or three eyes, while at the bottom of the wall they

should be allowed five or six. This should be the rule, and by adopting it uniformity of action throughout the tree will be secured, and a regular crop of fruit.

In how many gardens do we see the wall trees healthy and vigorous, yet totally destitute of fruit, with the exception of just a few at the extremities of the branches; yet, can we wonder when we see the treatment to which they are subjected? The breastwood is allowed to grow without heed or check until, some day, the whole is stripped off as bare as a Thorn hedge, thereby completely paralysing the action of the tree; or, perhaps, only a portion is taken, and that the lower, leaving the top part until some future convenient opportunity. This I have been compelled to do myself sometimes. The consequences are, increasing vigour in the top, where it ought to be suppressed, and a total absence of fruit. It cannot be too forcibly impressed, to always check the top or strongest part of a tree the first, and allow a greater leaf-development in the lower and weaker portion.

Apricot, Plum, and Cherry trees may be pinched with advantage more closely than Apples or Pears, yet all will amply repay the trouble. It is much more easily accomplished than winter pruning, and greatly more beneficial: in fact, in many soils and with many trees, if it cannot be done in summer it is better not to do it at all if fruit is required, as the entire tendency of pruning in winter is increased vigour and the production of mere shoots, not fruit.

In conclusion, I would beg to recommend all interested to go and see the beautiful, closely pinched, pyramidal Cherry trees in Mr. Rivers's grounds at Sawbridgeworth. They are as near perfection as any trees I have ever seen.

—ARCHAMBAUD.

ASPECTS OF SPRING GARDENING.—No. 2.

THE materials forming my first floral picture were taken from the neighbourhood of Southampton; from that neighbourhood shall also be drawn the ingredients of my second illustration. On this occasion the west side of that important town gives the place—namely Crabwood, the residence of Rolles Driver, Esq. The situation and surroundings of the two places differ materially. In the case of Glen Eyre it is a secluded sheltered spot, away from the "busy haunts of men," and sacred to repose, quiet, and privacy; the second stands close to a much-frequented highway, open to almost every point of the compass, especially to the blustering west, whence come at their appointed times sweeping gales from across the Solent Sea and Southampton Water, which test severely the hardiness of many plants, and sometimes the floral artist is doomed to see the labours of his head and hands wrecked before the fury of the raging blast. Such a spot as this can be taken as furnishing a safe testimony as to the adaptability of spring gardening as at present carried out for general application.

Crabwood may be taken as representing one of those plain and unpretending, yet snug and comfortable places, that are the abodes of country gentlemen. There is about it an entire absence of the handsome terrace gardens, the

charming undulations, and the rich woodland seen about Glen Eyre. Yet it has great natural advantages. It commands a fine view of the Southampton Water and the New Forest, that "stands dress'd in living green" beyond the line of the silvery waters; and in the distance can be caught the hills of the Isle of Wight, forming a lofty grey background to the whole. Such is the position of Crabwood. Within the last few years considerable improvements have been made in the grounds by Mr. Driver, for modern horticulture finds here a home, and flourishes under the intelligent supervision of the gardener, Mr. J. C. Higgs. Particularly does spring gardening form a pleasant feature during the early months of the year, Mr. Higgs having been one of the first in the locality to take it up.

The flower garden is on the south-east side of the dwelling-house, and occupies a good space on a somewhat extensive greensward. On the north this is bounded by a fine bank of Rhododendrons, on the other side of which is the carriage-drive sweeping by a gentle curve towards the house. It is here that Mr. Higgs's early spring arrangement starts into floral life, as adjoining the Rhododendrons next the carriage-way there can be seen clumps of the common Primrose, Cowslips, the common Bluebell, and other early-blooming spring flowers that do good service "by softening the harsh face" of surroundings otherwise dreary and uninviting. Eastward of the flower garden are seen some large beds, the centres of which are filled with Kalmias and Belgian Azaleas, and allowing of a broad border next the turf. In these beds Mr. Higgs plants, early in the autumn, some of the brightest and most striking forms of the variegated Kale, and among them places a few dwarf Laurels, Aucubas, &c., to secure a little shade, and to break the monotony of their otherwise formal appearance. Seen from the windows of the dwelling, these beds have a very pleasing appearance during the winter months. As soon as the Kale commences to decay, in the early part of the year, it and the shrubs are removed to the spare garden, the one to produce seed, the other for use another season; and a broad band of Polyanthus of the showy gold-laced type is placed round the Kalmias and Azaleas, and this is edged with the silvery Gnaphalium lanatum. The Polyanthuses are removed at bedding-out time; the Gnaphalium does good service during the summer. Raised rustic beds also have Kale as occupants, intermingled with the common Periwinkle, which blooms very early in such a locality. Inside the Rhododendron hedge, and sloping towards the lawn, was a long border, which Mr. Higgs has made an old-fashioned mixed border for biennials, perennials, &c. This was extremely gay with many plants, such as Alyssum saxatile, Arabis albidia, Iberis sempervirens, dwarf Phloxes, Pansies, Primroses, &c., many others coming up to take their place. A border of this kind need never be without flowers, while hardy herbaceous plants with variegated or gay self-coloured foliage can always be introduced with excellent effect.

Following this border the dwelling-house is reached, and here a grand display of colour presents itself, so striking that it needs to be seen to be appreciated, considering that what may be termed common things were the agents employed to produce so charming a floral picture. The beds forming the garden represent in their disposition an oblong, divided into two squares by a large circular bed, in the midst of which was a specimen of Cupressus macrocarpa; under this tree was a circular carpet of Stachys lanata, round this a broad band of Silene pendula—a glorious mass of colour, and this again was edged with a band of the Stachys. In the centre of each of the squares was a large diamond-shaped bed, having a centre of the extremely showy and dense-blooming double white Saxifraga granulata, planted in the shape of the bed, and margined with the Silene pendula. Four triangular-shaped beds formed the outline of the squares, making eight beds in all. Of these one-half were filled entirely by the blue Myosotis sylvatica, the other four had in the centre a triangle of the pink Silene, and an edging of the yellow-flowering Limnanthes Douglasii. This last combination made a fine display. The Limnanthes is one of the most valuable of spring-blooming plants; it is perfectly hardy, and during the winter months its bright green foliage does essential service in the flower garden, as it grows in compact tufts, and affords a marked contrast to the dark hue of the greensward.

Along the front of the dwelling-house was a border composed of a line of the blue Forget-me-not, edged with the Limnanthes. By the side of the conservatory was a broad border, having as a background two lines of the double white Saxifraga, in front of this a line of Silene pendula, then a band of Viola cornuta,

the whole edged with Cerastium tomentosum. On the left hand of a walk running from the conservatory in a south-west direction, was a series of small oblong beds; these also were charming masses of colour, being filled alternately with Saxifraga granulata flore-pleno, edged with the pink Silene pendula; and with the blue Forget-me-not, edged with Limnanthes Douglasii.

The reserve garden is an indispensable adjunct of all spring gardens. To this it is necessary to transfer Daisies, the Saxifraga, Polyanthus, Primroses, and many other things propagated by division of the roots. Here, too, should be beds available for raising from seed the Silene pendula, Limnanthes, Forget-me-not, &c. In all places of any pretensions to size, there are always odd corners available for this purpose, and at all seasons the gardener will find such an admirable refuge for many plants to gain new life and vigour for another season's service. Here, too, can be tested on a small scale the merits of any new agent that challenges attention previous to its being introduced to the flower garden. This leads to the assertion that spring gardening need not be subject to the charge sometimes brought against it, that an inevitable sameness is its annual heritage; this is not a necessary consequence, for new subjects are constantly being produced: and these, allied to skill and facility of design on the part of the gardener, cannot fail to yield him new floral pictures, each of which shall be to him a new charm, and a fresh revelation of the infinite resource the bountiful heart of Nature places at his command.—VIA.

POTATO FAILURES.

THERE is considerable anxiety in this neighbourhood regarding the Potato crop, arising from a very large per-centage of the tubers not having appeared above ground, though they have been planted ten weeks. Upon examination, very many of the tubers are quite decayed, and where they are sound they have thrown out numerous small and ill-shaped tubers without the least signs of any leaf growth, and where they did produce leaves it was in a very weak and uneven way. I might remark that this peculiarity is quite confined to the earlier sorts, such as the Royal Ashleaf, Coldstream Early, Racehorse, Milky White, and Myatt's Prolific. All the later sorts have come up as strongly and evenly as usual. Will some of our great Potato-growers give us their opinion as to the cause of this absence of above-ground growth, and whether the crop from the tubers produced is likely to be serviceable? Opinions in this locality are divided on the subject, for while some attribute the evil to the unpropitious state of the weather during March and April, others say that it arises through weakness from the premature ripening of the Potato in consequence of the hot weather of last year.

Now, according to my experience with the Potato, I am inclined to the belief that it is a little of both combined, with the injurious effect of a long season of rest. I have found the Potatoes more inclined to sprout this winter during their confinement than I have ever before known. The continual moving and rubbing-off shoots to keep the tubers plump must tend to weaken the eyes, and, consequently, exhaust the tuber, and if prematurely ripened, this will add weakness to weakness, and render the tuber quite incapable of resisting the effects of the bad weather we have lately had. Though the Potato is very tenacious of life, it is also very susceptible of injury from adverse circumstances, and last season was an exceptional one. In this locality many bad sets were stored which did not keep well, consequently inferior sets were planted.

I have arrived at the above conclusions partly through the following facts:—On the 14th of last August I planted one hundred tubers, selected from the early crop of Rivers's Royal Ashleaf, which were taken up in the last week of the previous May; they were planted on a south border, where they grew very fast; just two calendar months afterwards (14th of October), I dug them up with a produce of five hundred and ten tubers, or about five to one. I ripened them on the front shelf of a vinery. In the beginning of last February I planted two hundred of the best of these tubers, and not one failed to push above ground both healthy and strong; the produce was stored with that of other early sorts, and never showed a sign of growth until planting-time, while the sprouted eyes of the other tubers required rubbing off every week.

I perceived in your report of the General Meeting of the Royal Horticultural Society that the Rev. M. J. Berkeley considers the cause of failure to be probably owing to the starch, of which

Potatoes contain so much, being too firmly set in the cells of the tuber from over-ripening. Now, although I do not pretend to the ability to refute what that gentleman states, yet, if what he says is correct, how is it that the very same sorts of Potatoes that are playing such pranks out of doors, come up so well, and thrive and produce as good crops as ever in cold frames, turf pits, &c.? I have seen some very fine samples of Veitch's Improved Early Ashted this spring; they were planted in the early part of December in leaf mould and loam, and in a turf pit, with no forcing or any protection but old boards and mats. Other sorts of less value as early ones have turned out good crops, while out of doors there is great cause of complaint.—T. RECORD, *Lillesden Gardens, Hawkhurst.*

TENDER ANNUALS.—No. 5.

BESIDES those for which I have given full cultural directions, there are others very desirable for the decoration of the greenhouse or conservatory, and to furnish cut flowers in summer and autumn. They have not had that attention paid to them which they deserve, and it is remarkable that such should be the case, as they are of easy culture, and well repay any extra care. I now propose to treat of them briefly, giving a list of those I think most desirable, and there are others not yet in cultivation which I think might be introduced; indeed, it is very desirable that our greenhouses should be as gay in summer and autumn as they are in spring and early in summer; but at present during the autumn, and even late in summer, the plants which figure most conspicuously are those ornamental by their foliage.

Of tender annuals, the following are well worthy of attention:—*Browallia elata*, flowers blue, habit erect, 1½ foot; *B. elata alba*, white, 1½ foot; *B. grandiflora*, pale yellow, 2 feet; *B. demissa*, blue, very dwarf, 6 inches.

The seed should be sown early in March for an early bloom, but for fine plants not until April, sowing in a hotbed, and continuing the plants there until they are well established. Pot them off, three or five in a 4½-inch pot, when they are large enough to handle, and transfer them to a 6 or 7-inch pot when the pots become full of roots. For single specimens pursue the same treatment as that recommended for *Globe Amaranth*; it is admirably adapted for these and most other tender annuals. A compost of two parts light turfy loam, one part old cow dung or well-rotted manure, with a free admixture of sharp sand, will grow them well.

Centroclineum reflexum, flowers rosy, very pretty, 2 feet. Soil and treatment of the *Globe Amaranth*. Sandy loam and leaf mould, two parts of the first to one of the latter.

Cleome candelabrum (*Gynandropsis candelabrum*), flowers red, 1 foot; *C. cardinalis*, red, 2 feet; *C. pentaphylla*, white, 1 foot; *C. monophylla*, yellow, 1 foot.

Pretty plants, requiring the same treatment as the *Browallia*. They should have a cold pit after June, the plants up to that time being brought forward in a hotbed. Single plants may be grown in 4½ or 6-inch pots, and five or more in a pot for a mass; but in no case ought they to bloom in the pots they are sown in without their being well thinned out, and then they do not do so well as transplanted plants. Light rich soil is most suitable.

Commelina cucullata, flowers blue, very fine; the colour is very much wanted in greenhouses in summer; 2 feet. The flower has a curious appearance, being hooded. Soil two parts turfy light loam, and one part leaf mould. Two or three plants may be grown in a 6 or 7-inch pot, but single plants in 6-inch pots are fine.

The following Egg-plants are desirable on account of their fruit:—*Solanum melongena pekinense nigrum*, flowers lilac, fruit black, 2 feet; *S. melongena ovigerum*, flowers lilac, fruit purple, 2 feet; *S. melongena fructu-albo*, lilac, fruit white, 2 feet; *S. melongena fructu-luteo*, fruit yellow, 2 feet; *S. melongena fructu-rubro*, fruit red, 2 feet; *S. melongena fructu-violaceo*, fruit violet, 2 feet; *S. giganteum striatum*, fruit striped (commonly called the spotted *Gnadaloupe*), 2½ feet.

The seed should be sown in March, or early in April, in a hotbed of from 60° to 65° at night, and 70° to 75° by day, with a rise from sun heat to 80° or 85°. For sowing, use a pot or pan filled to within half an inch of the rim with light turfy loam, providing good drainage. Scatter the seed rather thinly over the surface, which ought to have been made fine and smooth, and cover about one-eighth of an inch thick with fine soil. Place in the hotbed, and keep the soil moist, and when the

plants appear keep them near the glass, allowing room for them to grow. When they have two or three rough leaves pot off singly in small pots, and return them to the hotbed, shading for a few days until established. Place the plants near the glass, and admit air freely, so as to keep them sturdy—a great point in the cultivation of annuals.

As the pots become full of roots transfer to others a size larger, and continue the plants in the hotbed, or in a house having the requisite temperature, placing them near the glass, and where they can have air freely. The plants should be repeatedly potted until they are in 6 or 7-inch pots, and then it is well not to be too liberal in the potting, but to keep them rather pot-bound until the plants flower and set their fruit; then place them in pots 8 or 9 inches in diameter, if large specimens are wanted, using a compost of two parts loam from turf torn in pieces with the hand, and made rather fine, but not sifted, and one part old cow dung, or well-rotted and dry hotbed manure, adding plenty of sand, and providing good drainage.

The plants after June are best grown in a cold pit, keeping them close, so as to maintain the proper temperature, and yet admitting air freely and early. In the afternoon give a good syringing overhead, and shut up by the time the temperature has fallen to 75°. To have fine large fruit these should be thinned to three for a plant in a 7-inch pot, five for a plant in an 8-inch pot, and so on in proportion to the size of plant or pot.

After the pot at the last shift becomes full of roots liquid manure should be given at every alternate watering, and the plants should be well supplied with clear water as well. The foliage must not be allowed to flag.

Insects are very injurious to the Egg-plants. Green aphids fasten on the young shoots, leaves, and blossoms, not sparing the young fruit. This is, perhaps, due to the plants being kept at too great a distance from the glass in a badly-ventilated structure, and with too little encouragement from potting frequently and a moist atmosphere. On this account, from experience, I advocate their being grown in cold pits or frames in June and afterwards, as they can then be more easily fumigated with tobacco. Fumigation should be resorted to on the first appearance of the aphids, and persisted in as it re-appears. The red spider likewise often renders the plant leafless. As a remedy for this, syringe twice a day with soot water made from 1 peck of soot in 30 gallons of rain water, stirring the whole well up, and using the liquid clear; also sprinkle the paths, walls, and other surfaces twice daily, and especially the plants at the time of closing the house or frame-lights.

The plants may be removed to the house they are to decorate when the fruit are about the size of a bantam's egg, and they will swell considerably larger; in fact, they may be grown fine in a greenhouse if the seed be sown and the plants forwarded in a hotbed, and removed to the greenhouse when in 6-inch pots, in June or July. The beauty of these plants is their fruit, but they never look so well as when the fruit is accompanied by handsome foliage; therefore, preserve it if possible by keeping down aphides and red spider, and the fruit will be large and fine in proportion to the foliage. They cannot have too light and airy a position.

Indigofera endecaphylla, flowers scarlet, plant trailing, 1 foot; very elegant. *I. enneaphylla*, purple, trailing; fine for vases, as is the preceding, or for pot culture. *I. diphylla*, purple, 6 inches. *I. linifolia* or flax-leaved, red, 6 inches.

The plants must be raised in a hotbed, and it is best to sow the trailing sorts in small pots, placing a few seeds in each, and thin out to three plants in a pot, shifting them into pots a size larger as often as those they occupy become filled with roots, and this must be repeated until the plants show for bloom. They must have a position near the glass, sprinkling or syringing them with water frequently so as to keep down red spider. A compost of equal parts of sandy fibrous loam and sandy turfy loam is most suitable, good drainage being given; and for successful culture a stove temperature is needed, though they succeed in a warm greenhouse when forwarded in a hotbed, and advanced for flowering before being placed in the greenhouse.

Ipomoea coccinea, scarlet, twiner, 6 to 10 feet. There is a variety of this with yellow flowers. *I. grandiflora*, white, 6 to 8 feet; *I. hederacea superba*, blue and white, 6 to 8 feet; *I. limbata elegantissima*, centre violet, margin white, 6 to 8 feet; *I. Quamoclit*, red, and there are its varieties alba and roses, having respectively white and rose-coloured flowers, 8 feet; *I. rubro-cerulea*, blue, and a white variety, *I. rubro-cerulea alba*, 8 feet.

These are fine for pillars and similar positions, and in pots;

one, two, or three stakes being put in after the plants are in pots sufficiently large. Several seeds should be sown in a small pot, and placed in a brisk bottom heat of from 70° to 75°, and when the plants are well above the soil admit air moderately. Without a brisk bottom heat the seeds are slow in coming up. Pot as soon as the roots reach the sides of the pots, thinning the plants out to three or at most five plants in a pot, and leaving but one in some for single specimens. Continue to shift into larger pots as often as those they are in become full of roots, and this repeatedly until the plants are in 8 or 9-inch pots. If flowers appear whilst the plants are young pick them off. The other particulars of culture are the same as for the *Thunbergias*, only the stopping must not be practised, and the plants are best trained to upright stakes or pillars. They succeed in a greenhouse from June.

Loasa aurantiaca, orange, climber, 6 feet; *L. volabilis*, yellow, 1½ foot, climber, pretty. Sow in a hotbed and treat like the *Ipomæas*, only wirework is best for training.

Lobelia hypocrateriformis, flowers purple, 1 foot, fine. Sow in a hotbed, and pot-off when large enough to handle, and as required, removing to a greenhouse in June, and affording a light and airy position. Soil, turfy loam two parts, sandy peat or leaf mould one part; good drainage, and a plentiful supply of water.

Manulea argentea, foliage silvery, flowers yellow, 1½ foot; elegant and fine. For treatment see *Browallia*.

Martynia fragrans, flowers pale purple, 2 feet; *M. lutea*, yellow, 2 feet; *M. proboscidea*, pale blue, 1 foot.

Sow in a hotbed in March or early in April, pot-off singly when large enough to handle, and continue in a good heat until the plants are large and showing for flower, then harden them off and remove them to a greenhouse, assigning them a light and airy position, but not a cool one. Pot as often as the pots become full of roots, and until the plants show for bloom. They produce fine showy flowers, and need a compost of two parts turfy loam and one part leaf mould.

Nierembergia linearifolia, whitish or pale lilac, 6 inches. Sow in a hotbed in sandy loam and peat, and pot-off the seedlings when large enough to handle, and when the pots fill with roots harden the plants well off, and remove them to the greenhouse to flower.

Salpiglossis linearis, flowers whitish, tinted red, 1 foot; *S. straminea*, red and white, 1½; *S. picta*, flowers white, spotted red, fine, 3 feet. Require the same treatment as *Browallia*.

Salvia foliosa, blue, 1½ foot. This is best sown in autumn, and should be well established before winter. Keep it in a warm greenhouse or cool stove during the winter on a shelf near the glass, where it will flower finely in spring or early summer. Seed may also be sown in March or April in a hotbed, and the plants, hardened off in June and removed to the greenhouse, will afford a succession. Light sandy soil is most suitable.—G. ABBEY.

ELM ROOTS—A WARNING.

It has often been said that the Elm is one of the worst of trees to have near gardens, as its roots are very hungry feeders, and are not easily prevented from intruding where they are not wanted.

Some years ago, at the back of the garden of which I had the management there was a row of Elm trees about 6 yards from the wall. The former gardeners had complained very much of the injurious effects which these trees had upon the garden, and especially on the Peach wall and border. The gentleman did not care much about the garden, being more interested in putting the home farm in order, and rearing young plantations; but about the time I went to the place he began to feel the necessity of looking more to the garden, as the family was fast growing up, and greater demands on the produce were anticipated. One of the first things which I pointed out as requiring to be done before the gardener could have any chance of cultivating trees against the Peach wall, was the removal of the Elm trees, although these were all of the upright-growing variety, which seldom branches to any extent. The gentleman had, years before, cut a trench, 2 feet deep, about half-way from the wall to the trees. With a triumphant air he told me to follow him, and see this ditch which he had had cut long ago; it was impossible any roots could now get through. The soil and subsoil were of a loose, half-decomposed, slaty nature, mixed with clay, in which trees grow well, and many of their roots wandered a long way in search of food. I endeavoured

to reason with him respecting the very injurious effects which the tops of the trees had upon his garden, apart from their roots, but could not give any definite statement as to how far off the tops of trees would exercise an injurious effect upon vegetation. I therefore observed that, supposing the trees to be between 80 and 90 feet high, I should say their influence would be extended to about one-half their height at least, and that they were not much more than 20 feet beyond the wall. The gentleman could not think they were too near the wall. Not satisfied as yet, I dug down in front of the wall, when about 2 feet down I found the Elm roots coming in through the loose rubble of the foundation, and rising up to the depth where the spade had always pinched off their points in their attempt to come directly to the surface. Thus they spread all over the border. Of course I was not slow in calling the attention of the gentleman to them; but all I could obtain from him by way of relief to the Peach trees was, "Oh, cut the roots off; they cannot come in again." This I did, but before another two years had elapsed the Elm roots had found their way some yards into the border, and to give a better proof of this being the case, I allowed some of the roots which shot above the soil to remain, when they soon developed themselves into vigorous young Elm trees.

Although I had the care of the Peach trees nine years, the only relief from the Elm trees during that time was from a gale of wind, which threw two of them over the garden wall. I frequently felt my position very unpleasant when reminded of some of the friends of the family having "very good crops of Peaches;" but their gardens were comparatively new, and had no forest trees behind them. The gentleman's argument was that the Elm trees sheltered the garden to some extent, and he would certainly be much opposed to their removal, especially as they were there long before he was born.

I have often observed during calm, hot, sunny days, that the heat before this Peach wall became quite oppressive, and, of course, the juices suddenly drying up, the consequences were blister and red epider, the early maturity of the leaves, stoppage of growth too early; and then if there was much rain towards the end of August, or early in September, autumn growth was encouraged. All this assisted to paralyse the trees. I call it placing a man in a false position, to expect under such circumstances results equal to those obtained in places more favourably situated, and where there are no forest trees within 50 yards of the garden. Such revolutions ought to act as warnings.—G. DAWSON.

ROYAL HORTICULTURAL SOCIETY.

FRUIT COMMITTEE, June 1st.—George F. Wilson, Esq., in the chair. Messrs. Barr & Sugden exhibited several specimens of Lettuces in very good condition—Victoria, Stanstead Park, Eclipse, Brown Dutch Cabbage, Paris Green Cos, Field's Winter White, and Prince of Wales Cos. The last two were very similar to Moorpark and the common hardy Green Cos of the market gardens. These had been planted in the open ground in October, and withstood the winter very well. The Paris White Cos, on the contrary, succeeded badly. Mr. Fenn, the Rectory, Woodstock, exhibited some remarkably fine specimens of Yorkshire Hero Potatoes, some of which were cooked for the Committee to taste, and were found extremely fine in flavour and very floury. This variety received a first-class certificate on a previous occasion, and is altogether first-class. Mr. Fenn also exhibited samples of Potatoes clubbed or nonspouted, &c., and made some very interesting remarks as to the cause of the same, which, at the request of the Committee, Mr. Fenn kindly embodied in the following remarks, for which the Committee awarded Mr. Fenn a special vote of thanks:—

"The examples of clubbing so usual this season show the vitality of the Potato after severe 'sprouting'—that is, disbanding for two years. They were placed in a box and covered with dryish soil, 2 inches deep, about the middle of March, and are producing young tubers about the size of Filberts and under without any signs of foliage. A plate of Hogg's Coldstream, the produce of 1863, has been specially kept sprouted for producing young Potatoes in this way, when planted in boxes about the end of October. Seed Potatoes specially prepared for the prevention of clubbing are also shown. The seed is placed in wood trays—merely old doors with laths nailed round them, and the Potatoes kept in single layers in a subdued light from the moment they are taken up till within about three weeks of the time of planting, when the strongest shoot on each is selected, and every inferior sprout is scooped out cleanly with a penknife; the consequence is, at the time of planting, one young shoot to each tuber as strong as one's little finger, and as firmly attached to the tuber as the limpet to the rock, and 'club' is prevented with certainty. This never can be the case when the crop at taking-up is kept in masses and becomes heated, and the sprouts are removed over and over again, till the substance of the tuber is sacrificed. Again, as regards 'club,' in the present year so much complained of, a Paterson's Victoria is shown which had super-

tubercled last year, and has lost its properties as a healthy seed to plant for produce. Is not this a great cause of producing the 'club' this season? Those run-out Potatoes, should have been separated from the super-tubers at the time they were taken up, and boiled for the pigs.

"Walnut-leaf Kidney, old Ash-leaf Kidney, Fenn's Onwards, Paterson's and Scott's Blue, as I prepare them for seed, are shown; also, grafted Potatoes of Wheeler's Milky White grafted on itself, and the same kind grafted on Yorkshire Hero, showing a present difference of character of eye, and form of tuber; likewise the old Haigh's Kidney, alias Lancashire Short Top, alias Runcorn Short Top, which Mr. Almond grafted into the Haigh's Lapstone Kidney, and produced the Almond's Yorkshire Hero. Is not the Lancashire Flounder a synonym of the Lapstone Kidney? If so, the Yorkshire Hero, which is an improved Early Lapstone Kidney, is produced of the same blood bred in-and-in. Tubers of 1867, in good condition, of Yorkshire Hero are exhibited; also the same variety of last season's growth in a cooked state."

FLORAL COMMITTEE, June 1st.—The exhibition this day, preceding the great Show of the year, was, as might have been expected, very far behind the usual meetings. The specimens, whether seedlings or others, were, doubtless, reserved for the morrow.

Messrs. Veitch sent a small collection of plants, including *Iresine Lindenii*, *Fittonia gigantea*, *Dieffenbachia Wallisii*, *Maranta princeps*, *Maranta chimboracensis*, *Cyanophyllum spectandum*, and *Alocasia Sedeni*, a hybrid, which received a first-class certificate.

Messrs. Carter were awarded a first-class certificate for two *Gymnogrammas*, namely, *G. chrysophylla maxima* and *G. calomelanos maxima*. These are strong-growing plants of Gold and Silver Ferns, well adapted for conservatory decoration. From Messrs. Carter also came *Dichorisandra mosensis* and a terrestrial Orchid *Lissochilus speciosus*, a bright yellow conspicuous flower, not unlike the yellow Mullein. For this a second-class certificate was awarded.

Mr. George, nurseryman, Putney Heath, sent a collection of seedling Zonal Pelargoniums, some of them hybrid Nosegays, and one broad-petaled flower, Pretender; this was the best of the collection, but there are already several of the same colour. This flower was deficient in smoothness.

Messrs. Henderson, Wellington Road, sent an interesting specimen of *Coleus Telfordii aureus*, on which had been grafted six other varieties. This formed a very handsome plant, and there is little doubt but that the idea will be followed up. A special certificate was awarded for it. *Canna marmorata* came from the same firm, but was too indistinct.

Messrs. Rollisson, Tooting, sent seedling Lobelias of various colours, from white to blue, but none of them was sufficiently distinct from older varieties. A special certificate was awarded for a collection of Orchids from the same firm.

Messrs. Low sent a plant of *Odontoglossum Phalenopsis*. Mr. Bowman, gardener to Sir J. Hawley, sent a fine specimen of the British Orchis fusca. Mr. Green, gardener to W. W. Saunders, Esq., received a special certificate for his collection of Orchids. Among them one, if not more, were species, but all of that peculiar, we might say droll, form and character which seem so acceptable for Mr. Saunders's "Refugium." Mr. Green also exhibited cut specimens of more than forty distinct species of the Cape Pelargoniums; this was an exhibition in itself to those who have been acquainted with this peculiar class of flowers, some of them remarkable for their scent, others for colour of the flowers. It is most desirable that these despised plants should be again attended to and brought forward. It is impossible to say what might be the result of hybridisation with flowers of the present day. G. F. Wilson, Esq., brought a specimen of *Lilium Thunbergianum*, a cut flower of *L. Szovitzianum*, which was decided to be a form of *L. colchicum*, also *L. pomponium*. Mr. Mitchell, gardener to Dr. Ainsworth, sent cut specimens of Orchids.

From Messrs. Downie, Laird, & Laing came a most superb orange scarlet double Zonal Pelargonium called Victor Lemoine, which received a first-class certificate—the best double yet exhibited; Bronze Zonal Imperatrice Eugénie; and Bronze Zonal W. R. Morris, which was awarded the first prize on May 22nd, also *Coleus Sainsonii*, with bright pink shades in the centre of the leaf, very distinct and handsome. To this a first-class certificate was awarded.

From the gardens, Chiswick, were sent specimens of a hybrid *Dianthus*, raised by Major Trevor Clarke, a useful herbaceous plant, sweet-scented, and with a profusion of bright pink double flowers.

After the meeting was over Lord Lonsborough brought a box of cut flowers of some of the finest Orchids ever seen. His lordship kindly displayed them before the meeting, after which they were reserved for some special purpose.

GENERAL MEETING, June 1st.—J. Bateman, Esq., F.R.S., in the chair. Five new Fellows were elected, and the Cirencester Horticultural Society admitted into union. After the awards of the Committees had been announced, the Rev. M. J. Berkeley addressed the meeting, directing, in the first place, attention to the cut specimens of various flowering trees from Chiswick, and particularly to a variety of the common Horse Chestnut, of which the flowers afforded one of the most beautiful contrasts of white and red he had ever seen, and it was hoped to raise a number of seedlings of it for distribution. A branch of the common Hawthorn from Mr. Wilson Saunders was also noticed

as having a remarkable history. The plant to which it belonged was raised from the common white-flowered variety, and the first year that it flowered the blossoms were white, in the second year they had a tinge of pink, and in the third year they were altogether pink. Some yards from this tree there was one of the pink-flowered variety, and it was possible that the pollen from the latter might have exercised an influence in bringing about the result. *Lilium Szovitzianum*, exhibited by Mr. Wilson, was then said to be not different from *L. colchicum*, and *Cyclobothra alba*, from Mr. Wilson Saunders, was pointed out as being extremely beautiful, regret being expressed that such lovely plants were lost in this country, and a hope that they would be re-introduced. A handsome hybrid Pink from Major Trevor Clarke next occupied attention, and it was stated that it had been raised from a Pink at Daventry, which had been traced to Mr. Atkins, of Painawick. It was probably a garden variety of *Dianthus alpinus*. Mr. Berkeley next produced specimens of the Douglas Fir, showing a very deplorable state of the tree from which they were taken, the injury being, no doubt, the effect of frost a year ago, for the full extent of such injury was not always apparent at the time. The subject, however, was of extreme importance, for all knew what magnificent spars the tree in question furnishes, and Government some years ago had sent out for a ton of seed. It was, however, almost useless planting trees derived by seed or otherwise from those growing in the hotter districts, as they did not prove hardy; but those raised from seed from Vancouver's Island were much more so, and promised to attain an enormous height. The difference between the two kinds of this tree at Messrs. Standish & Co.'s, Mr. Berkeley added, was very remarkable. Nothing was more common than to assign a chill as the cause of the leaves of Peaches and Nectarines blistering, but he produced a specimen of the common Almond—a tree of which the Peach was probably only a form—in which the blistering was the work of an extremely minute fungus called *Ascomyces*.

Mr. Higford Burr and Mr. Bateman confirmed Mr. Berkeley's remarks as to the difference in the hardness of trees of the Douglas Fir, and Mr. Bateman said, though he had planted trees of it obtained from various sources, they all dwindled and died, except one from seed sent home by Douglas. He also produced a very curious fungus which had been found in his butler's pantry, and which Mr. Berkeley said was very rare. After some remarks on the desirability of re-introducing the *Cyclobothras* and *Calochortuses*, Mr. Bateman pointed out a remarkable mass of *Odontoglossum Phalenopsis*, from Messrs. Low, but the part of New Grenada from which it came was preserved a strict secret. Orchid pots of a new form were next referred to. These, Mr. Bateman said he had made with a dish at the base to hold water and to prevent the ascent of woodlice; then from the midst of the dish sprung an upright earthenware stem, perforated with holes, and supporting either a dish containing peat, &c., or a hollow cylinder for Orchids that did not require peat. By varying the height of the stems, small plants could be brought nearer the light and equalised in height with taller-growing kinds. Mr. Bateman then pointed out the most remarkable of the Orchids, particularly *Epidendrum vitellinum majus* from Messrs. Rollisson; *Orchis fusca*, found in Kent, and also, he believed, in Huntingdonshire; a magnificent cut specimen of *Odontoglossum grande* from Mr. Marshall, and the various beautiful cut Orchids in the box brought by Lord Lonsborough.

GREAT SUMMER FLOWER SHOW.—June 2nd and 3rd.—Without question this is one of the best Shows the Society has ever held—indeed, one of the best that has taken place since the memorable International Horticultural Exhibition of 1866, as far as material is concerned, although the effect produced is marred by the place of exhibition being the conservatory and arcades. Our remarks this week must necessarily be brief and imperfect, owing to our time of going to press, but we purpose giving a more full report in our next number.

Of Stove and Greenhouse plants the collections are not only numerous but the specimens good on the whole, although as regards the kinds of plants exhibited there is absolutely nothing fresh. In the class for twelve, Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, is first, exhibiting among others very large specimens a finely-bloomed plant of *Allamanda grandiflora*, although the flowers are not so large as we have seen on, if we mistake not, the same plant in former years. He has also *Ixora coccinea*, *Franciscia calycina*, *Genetyllis tulipifera*, and *Eriostemon huxifolium*, in fine condition. Mr. Willie is second in the same class, and has an excellent *Dracophyllum gracile*, *Franciscia calycina*, small, but with finely coloured flowers, and a good *Acrophyllum venosum*. In the nurserymen's class for six, Mr. Williams is first, and Mrs. Glendinning & Sons second, whilst for collections of the same number from amateurs, Mr. Kemp, Mr. Wilkie, and Mr. Ward have prizes for well-grown plants. The best single specimen is a *Medinilla magnifica*, from Mr. Wilkie, covered with large, bright, rose-coloured panicles, the second best being a large specimen of *Erica Cavendishii*, from Messrs. Lee, of Hammersmith.

Of Azaleas there is also a large display, Messrs. Lee taking the first prize for nine, the finest of which are *Coronata*, *Stanleyana*, and *Punctata rosea*. There are, besides, several other smaller collections very good. Messrs. Ivery are first in the class for fifteen, in pots not exceeding 12 inches in diameter.

Of Roses there is a splendid display. In Messrs. Paul & Son's

first-prize nine, Juno, Maréchal Vaillant, Céline Forestier, La Reine, and Madame Willermoz, are very conspicuous; and Mr. Turner, of Slough, has fine examples of Victor Verdier, Souvenir d'un Ami, and Comtesse de Chabillant. Mr. W. Paul, who is second in the same class, has magnificently-bloomed specimens of Catherine Guillot, Lælia, Juno, Comte de Nanteuil, but most of them appear to have suffered from the sun. For six new Roses not sent out previous to 1866 or 1867, Mr. Turner is first with Princess Mary of Cambridge, Madame Margottin, Horace Vernet, rich in colour; Charles Verdier, fine; Souvenir de Monsieur Boll, and Paul Verdier, very fine. Messrs. Paul & Son are second.

Of Pelargoniums there is likewise a very fine exhibition. Messrs. Dobson, of Isleworth, and Mr. Ward taking the first prizes for Show kinds in the nurserymen's and amateurs' classes. Caractacus and Rose Celestial, from Mr. Ward, by the great size of the plants and the abundance of their flowers, are especially conspicuous. Mr. Windoor, who takes a second prize, has also excellent specimens, and for Fancy kinds he is first, Messrs. Dobson taking the corresponding position among nurserymen. The same firm likewise take the first position for herbaceous Calceolarias with beautifully-flowered plants of the strain for which they are celebrated; Mr. Welch, of Hillingdon, being second with others almost equally good.

Orchids form a charming bank of flowers, diversified in their form, and brilliant in their colours. Mr. Young, gardener to W. H. Stone, Esq., M.P., Havant, is first for twelve, with a collection in which we noticed the richly-coloured *Vanda gigantea*, *V. tricolor insignis* and elegans, a large pot of *Oncidium sphacelatum*, another species of the same genus from New Grenada, and *Brassia verrucosa*. Mr. Burnett, gardener to W. Terry, Esq., Fulham, who is second, sends *Cypripedium villosum*, *Odontoglossum luteo-purpureum*, the Foxgush *Acrides*, *Cattleya Mossiae*, of very fine colour, and *Odontoglossum cordatum*. For ten, Mr. Williams, of Holloway, is first with *Cypripedium punctatum* with three fine spikes, a very large *Acrides odoratum*, *Lælia cinnabarina*, most effective in colour, a fine pan of *Cypripedium barbatum nigrum*, *Vanda suavis*, and *Oncidium hastatum* and *obryzatum*. For six, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, is first, and Mr. Wright second; whilst the prizes for single specimens go to Mr. Douglas, gardener to Sir F. Waterlow, Highgate, for *Cattleya Mossiae*; to Mr. Parker, Tooting, for *Vanda suavis*; and to Mr. Carson, Nonsuch Park, Cheam, for *Cypripedium barbatum grandiflorum*.

Plants shown for their foliage make a grand display, especially the stately specimens from Mr. Fairbairn, gardener to the Duke of Northumberland, at Sion, who has the first prize for nine. Among these are *Neottopteris australasica*, forming a gigantic cup at least 7 feet in diameter; *Phoenix farinifera*, and *Cocos pumila*, both gigantic plants; a large *Cycas revoluta*, and fine *Alocasias*. Mr. Taylor, gardener to J. Yates, Esq., Highgate, is second in the same class with excellent specimens. The best six come from Mr. Taylor, Mr. Fairbairn here taking the second place, and Mr. Wright, gardener to C. H. Roberts, Esq., the third. The last-named also furnishes beautiful exotic Ferns, the lively green of which is quite refreshing to the eye, and Mr. Taylor takes the second prize for the same number, and Mr. Carr is first in the class for six. As usual, Messrs. Ivery are foremost for hardy Ferns. The exhibition of *Colasene* is a feature which will doubtless be looked to with much interest—an interest no more than justified by the rich and diversified colouring which those plants now present. Messrs. Downie & Co., are first; Mr. Turner, second; and Messrs. E. G. Henderson, third. Baroness Rothschild, Princess Royal, Prince of Wales, Her Majesty, Prince Consort, Pretender, Royal Purple, Emperor Napoleon, and Telfordii aurens, are conspicuous among the best shown.

New plants are another feature of the Show; very numerous and very interesting they are. We have only space for the mention of a few. Messrs. Veitch are first for six with *Iresine Lindenii*, *Croton anacardifolium*, *Phormium Colensoi variegatum*, *Masdevallia Veitchiana*, *Nepenthes rubra*, and *Anæctochilus Dawsonii*. The same firm is second with *Darwinia fimbriata*, *Thunia Bensoniae*, *Dracæna nigro-rubra*, *Davallia hemiptera*, *Croton Hillianum*, and *Retinospora filicoides*. The first prize for a new plant shown for the first time in flower is also taken by Messrs. Veitch with *Begonia Sedenii* with very showy bright rosy red flowers; the second going to *Masdevallia coccinea*, also from Messrs. Veitch. For a new plant not in commerce Messrs. Veitch are again first and second with *Davallia Moorei* and *Croton variegatum Veitchii*, with large leaves having purplish pink midribs and veins.

FRUIT, though not shown largely, is excellent. In Pine Apples Mr. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, is first with an Eveville of 7 lbs. weight, Mr. Budd being second with a well-ripened Queen of about 4 lbs., while Mr. Wallis, gardener to J. Dixon, Esq., is third with a Black Prince.

For Black Grapes Mr. Douglas, gardener to F. Whithorn, Esq., Loxford Hall, Ilford, is first with finely-coloured bunches of Black Hamburgh, Mr. Bannerman, gardener to Lord Bagot, Blithfield, being second; Mr. Sage, gardener to Earl Brownlow, third; and Mr. Eadey, and Mr. Miller, gardener to Lord Craven, Combe Abbey, fourth. Those from the last are magnificent bunches, much the largest shown, but not well coloured.

For White Grapes Mr. Douglas is again first with excellent bunches of Buckland Sweetwater; Mr. Melville, Dalmeny Park, Edinburgh,

being second with Golden Hamburgh; and Mr. Tagg, gardener to the Duke of Newcastle, Clumber, third, with White Frontignan.

Of Peaches, some very fine dishes are shown. Mr. Lynn, gardener to Lord Boston, Hedsor, is first with Royal George, large and fine, Mr. Sage being second with the same kind, and Mr. Wilkie third with Early York. Mr. Lynn is also first for Nectarines, with *Violette Hâtive*, large and beautifully coloured; Mr. Miles, gardener to Lord Carrington, being second with excellent *Elruge*; and the same kind from Mr. Gardiner, Elington Park, is third.

For Pige no first prize has been awarded. Mr. Day, Norton Hall, Daventry, takes a second prize with White Marseilles, and Mr. Miles is third with Brown Turkey.

Of Cherries only two dishes are shown—viz., Elton and Black Eagle, by Mr. Miles, who takes a first prize. Mr. Douglas is also first for Strawberries with British Queen, large and fine; Mr. Miles being second with Sir J. Paxton, and Mr. Young, gardener to W. H. Stone, Esq., third.

Of Melons, Hybrid Casmere and Victory of Bath, from Mr. Lynn and Mr. Miles, are first and second in the class for green-fleshed; and Scarlet Gem, from Mr. Carmichael, gardener to His Royal Highness the Prince of Wales, at Sandringham, and Royal Ascot, from Mr. Miles, occupy the same relative positions among scarlet-fleshed kinds.

A few miscellaneous subjects are shown. Mr. Miller takes a first prize for a cluster of *Musa Cavendishii*; Mr. Budd, gardener to Lord Darnley, a second prize for Tomatoes, very fine and beautifully coloured, and Mr. Whiting, Battersea, a third prize for eight pots of Sir C. Napier Strawberry. Mr. Gardiner sends two baskets of French Crab Apple in excellent condition, a boxful of Peaches, and a small portion of a branch of the Noblesse with seven fruit ripened within a small distance of each other. Messrs. Ivery contribute large tubers of the Chinese Yam, *Dioscorea batatas*, in the cultivation of which they proved themselves to be eminently successful soon after its introduction as one of the many substitutes that have been proposed for the Potato.

MR. ANTHONY WATERER'S AMERICAN SHOW.—In addition to the attractions of the Show, the Knap Hill Rhododendrons in the great tent are now coming into beauty, and though many are not yet in full flower, especially the novelties, they already present a fine expanse of colour, and next week will probably be perfection. The Council of the Society at their Meeting on Tuesday unanimously voted the Society's Gold Medal for Mr. A. Waterer's fine exhibition.

THE INTERNATIONAL HORTICULTURAL EXHIBITION AT ST. PETERSBURG.

At the conclusion of the meeting of the Botanical Congress at St. Petersburg, it was announced to Dr. Hooker and Dr. Hogg, through Aide-de-camp General Greig, that it was the wish of the Emperor to confer on them a distinction (the Cross of the Order of St. Ann), as a recognition of the services each had rendered in his special pursuit, but as the British Government, with which his Imperial Majesty is in friendly relation, did not permit its subjects to receive decorations from foreign powers, he regretted he would not be able to carry out his desire. His Majesty, however, had commanded *souvenirs* to be prepared, which he asked those gentlemen to accept as a mark of his consideration and a memento of their visit to St. Petersburg.

At the distribution of the prizes, the representatives of English horticulture took a prominent place. Messrs. Veitch and Sons, of Chelsea, obtained—1st, The gold medal, as first prize, for three new plants, in or out of flower. 2nd, The first prize, a gold medal, for a new plant in bloom—*Vanda insignis*. 3rd, First prize, a gold medal, for three new Orchids in bloom. 4th, First prize for a new garden hybrid, *Alocasia Sedenii*, obtained between *A. metallica* and *A. Lowii*. The subjects shown for the 2nd and 4th prizes were considered so good, gold instead of the silver medals offered in the schedule were awarded. These gentlemen also obtained two large silver medals, extraordinary specimens of the numismatic art, for collections of garden tools and a collection of seeds.

Robert Warner, Esq., of Broomfield, Chelmsford, of whose spirited enterprise we spoke in our former report, received the first and second prizes for two collections of ten splendid Orchids, represented by two gold medals; the first prize for the best single specimen Orchid, a gold medal, and the third prize for the same; the second prize for three new Orchids, and a silver medal for the model of a double-roofed greenhouse constructed for thorough ventilation.

Mr. W. Handspace, of Haltwistle, Northumberland, received a gold and a large silver medal for ornamental pots for garden decoration.

Mr. Sidney Ford, gardener at Leonardslee, Horsham, sent a

fine collection of Apples and Pears, which arrived too late for the judging, but it is hoped that they may yet receive some recognition, as they would no doubt have received the first prize if they had been forwarded in time. Mr. Sealing, of Nottingham, sent a collection of all the varieties of Willows used for basket-making in England.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE May meeting of this Society was held on the 3rd ult., at Burlington House, the President, W. H. Bates, Esq., being in the chair.

The Secretary announced that a new part of the "Transactions" of the Society was ready for distribution among the members. Mr. S. Stevens exhibited a large collection of the Coleoptera of China, taken between Hong Kong and Shanghai, and two Melontheae from Japan. Mr. Butler stated that the Locust exhibited by him on the 15th of February last, which had been taken on board a vessel off the coast of Africa, was still alive, although it had eaten nothing since its arrival in this country. Professor Westwood exhibited a number of British and exotic species belonging to the remarkable Hymenopterous genus Epyris, including a beautiful species of *Calyoza* from Natal, with pectinated antennae in the males, and which had hitherto been known only by a specimen preserved in gum animi, which he had described many years ago. The group is of doubtful affinities, oscillating between the aculeated Scoliidae and the terobrant Proctotrupidae.

Mr. F. Smith exhibited both sexes of a species of *Cynips* (*C. quercus spongifica*), reared in August from galls upon the Black Oak in North America, and sent by Mr. Walsh, of Illinois, to Mr. C. Darwin. The males of this restricted genus had hitherto remained unknown, although the females had literally been reared by thousands. From the same galls females only of a different form, which had been named *Cynips q. aculeolata*, were reared very abundantly in October; but the most remarkable circumstance was that from a distinct gall upon a different kind of Oak, both males and females perfectly identical with *C. spongifica* were reared at the latter end of June. The President stated that it was well known that the spring and autumn broods of certain Butterflies differed so much from each other, as to have been considered distinct species,—e.g., *P. Levana* and *Prorsa*, and other instances among the nocturnal Lepidoptera, including *Bactra uliginosana* and *Geometra illustraria*.

Mr. Horns stated the result of observations made during several years in India as to the species of insects which are more especially free from or liable to the attacks of birds, reptiles, and small quadrupeds—thus, Blaps, Geotrupes, the Mylabridae, and *Anthia 1-maculata* were never attacked, and lizards and birds invariably reject the large and brilliant-coloured and spotted locusts; the female wingless Glowworms are never eaten, although the winged males may be less fortunate. The dull-coloured migratory Locust, on the contrary, was eaten by all birds, squirrels, and mice, although none of the Cimicidae, Julidae, Blattæ, or Mantide were touched.

Mr. MacLachlan exhibited a species of white Ant, which had committed much damage in the island of St. Helena. It was supposed to have been imported from Brazil or the West Indian Islands, being nearly allied to the *Termetenus* from St. Domingo, and differing so much from all the African species as to lead to the conviction that it could not have been imported from that continent. He also exhibited a number of minute black Podure, found floating on the surface of a pool of water, having the appearance of a mass of grains of gunpowder; also a number of a minute white species, found floating in the saucer of a flower-pot in his house at Lewisham.

The Secretary stated that the Rose Chaffer, *Cetonia aurata*, had been captured on the 11th of April, and Mr. S. Stevens read a report on the ravages of the Coffee-tree Borer in India. A memoir by Mr. A. R. Wallace, on the eastern species of Butterflies belonging to the genus *Diadema*, was read, as well as "Notes on New or Little Known Species of Butterflies," by Mr. A. G. Butler.

COOL-HOUSE ORCHIDS.—No. 3.

ORCHIDACEOUS plants have for the past thirty or more years been considered the most difficult of plants to cultivate. They were once not only imported in limited quantities, but subjected to so close an atmosphere, and so high a temperature, that they were made to live too fast, and too long without rest; from their growth being thus continually stimulated they dwindled and died, and their flowering was considered anything but an everyday occurrence. The supposed difficulty and uncertainty attending their cultivation, the great art and skill, the expensive description of houses, and the cost of the plants, deterred many from embarking in Orchid culture. It was only those with princely means, and those enthusiasts (as J. Bateman, Esq., the great veteran and champion of Orchid importation and culture), who spared neither pains nor means, and from a failure gleaned a way to success, and from success were spurred on to greater exertion, that gave the attention to this class of plants they deserve, and are now receiving. Thanks are also due to the perseverance of our nurserymen,

Messrs. Veitch, Low, Williams, Backhouse, and others, for by their aid almost every possessor of a greenhouse or vinery may now indulge in Orchid culture.

Much within the past few years has been done to increase the demand for, and extend the cultivation of Orchids by their importation in considerable quantity, as compared to what they were, and at proportionately less cost; but those endeavours, however well meant, would have been unavailing had not a radical change been made as regards our former system of culture. The chief credit of bringing Orchids to their present deserved popularity, and promoting their extended culture, is due to the clear understanding and the careful culture and observation of Mr. Dominy, of Messrs. Veitch's; Mr. Williams, of the Victoria Nursery, Holloway; and Messrs. Warner, Turner, Anderson, of Meadow Bank, and other eminent cultivators. Such men have shown the great perfection and surpassing beauty which plants of this class are capable of attaining in our cloudy and uncongenial climate, and this has led others to follow in their wake; and to the press we owe much, and especially to those making known their experience and observations through its medium. Experience and observation are of no avail in promoting a taste or diffusing a knowledge of the culture of plants, unless the cultivator be of a generous diffusing mind. The successful cultivator usually does not rest satisfied with his own success, but by his writings strives to make others as successful as himself. Of such men we have many, able and practical, occasionally detailing their experience in these pages, and it is not very long ago that a series of articles on Orchid culture was given by one of the then most experienced cultivators, Mr. T. Appleby, whose articles were collected in a book, and issued from the office of this Journal; the "Orchid Manual" being not only a cheap work, but one affording sound, practical information on Orchid treatment. Nor must I omit mentioning Mr. Williams's "Orchid-Grower's Manual." With these two works no one from want of instruction need fail in Orchid cultivation.

It is not of the whole tribe of Orchids that I now propose to offer a few notes, but only of a portion, and those that are known as cool-house or vinery Orchids, which are chiefly those from New Grenada, Peru, Guatemala, Mexico, Brazil, Northern India, China, Australia, and other countries. The first three or four though "hot tropical countries," are, write the Messrs. Backhouse, "by their geographical position subjected to a very high temperature in low and flat districts all the year round, yet their elevated regions afford a very different climate." The same eminent firm further describe the climate which certain species are found luxuriating in in their native home, and some experiments they made with certain species supposed to require a high temperature, led them to the conclusion, that the culture of vinery and greenhouse Orchids will become general when their beauty and ease of culture are known. In Messrs. Backhouse's catalogue of cool Orchids for 1865, is the first published record of the cold endured by a majority of orchidaceous plants, for particulars of which I beg to refer the reader to the catalogue itself, but I cannot forbear making a copious extract of the treatment proposed to be given this class of plants.

"As a rule," write the Messrs. Backhouse, "while these plants are growing freely, they should have an abundant supply of water; *Odontoglossums* should never have the soil dry, but they like air in constant motion, and a bright sunny position in winter. In summer they should be carefully shaded from direct sunshine, and a very humid atmosphere maintained, combined with very free ventilation day and night. At that season the night temperature should be 15° to 20° lower than the day temperature, so as to cover the plants with dew. In winter, and especially when the temperature is very low, little or no water should be given, and the atmosphere should be kept as dry as possible. The pseudo-bulbs are the natural reservoirs for moisture, so that if plump and well matured, the plants will require no water for weeks or even months while at rest during the winter, and this is, in fact, the only safe condition at this period. Air will be dangerous with the thermometer (outside) below 40°, but will be advantageous when the sun shines, and there is little wind for an hour or two at midday, the thermometer being at 45°, or more, outside in the shade."

"Where Orchids are grown on blocks of wood, cover the roots lightly with sphagnum or any fresh green moss (clear from insects), beyond which sprinkle a little fibrous peat, the whole being firmly secured with zinc or copper wire. When grown in pots, fill the pots to two-thirds of their depth with broken

pots, above which place a mixture of chopped sphagnum and fibrous peat, adding a little white sand. Compress this compost firmly, and raise it in the form of a cone far above the rim of the pot, placing the plant on the top, the roots (fibres) only being buried in the moss, &c."

Mr. Warner, of Bromfield, Chelmsford, one of the most enthusiastic and skilful cultivators of Orchids, follows in 1866, with a paper read before the Botanical Congress, held in London, on "Cool Vinery Orchids." Mr. Warner after a few introductory remarks, and mentioning how he became an advocate of the cool treatment of Orchids, in the first instance by a successful experiment with imported plants of *Lycaste Skinneri* twelve years ago, states, "After my first year's experience with *Lycaste Skinneri*, other *Lycastes* were tried, and did equally well; also, *Odontoglossums grande*, *pulchellum*, &c.; next, *Arpophyllum*; and, lastly, *Pleione lagenaria*, and various others, including *Cattleyas*. All did well under the shade of the Vines in summer, but I should not recommend *Cattleyas* to remain during winter at the same low temperature which is sufficient for *Odontoglossums* and *Lycastes*."

"It is not, however, desirable at the present time (1866) to describe too minutely the treatment of what are now called cool Orchids; suffice it to say, that in my opinion there are very few Orchids but feel the beneficial effects of warm fresh air, and of the sun's rays, especially if the latter are made to pass between Grape leaves. Temperature in winter, 45° to 50° Fahrenheit (7° to 10° C.), sometimes lower, if frost is severe, but never below 40° (4.44° C.), even at night. Summer temperature varies according to the weather outside. Plenty of fresh air is admitted when the days are fine and warm, entering by front cashes through perforated zinc, and passing directly over the foliage of the Orchids, so that the leaves may gently wave about. As a rule, artificial heat is dispensed with in warm spring, summer, and autumn days; but at those seasons if the weather is cloudy or cold, a little fire heat is given to dry up the moisture occasioned by watering the plants. The temperature of the water should be at least 10° higher than that of the atmosphere of the house."

"Thus many Orchids may be grown well, and at little cost, for two different crops are produced out of one simple house; the first consisting of beautiful flowers to please the eye in the winter and spring months; and the other, such fruit as no one would refuse to partake of in July, and the early autumn."

We should bear in mind that the above was written in 1865 and 1866 when the idea was young, but I believe advancing to maturity, which it may now be said to have arrived at; at least nothing appears to have altered Mr. Warner's views.

Both Messrs. Backhouse and Mr. Warner distinguish between "cool" and "warm" vinery Orchids which is a very essential point, and one that cannot be too well known, for I must confess to having at even at a somewhat recent period, no great faith in the successful culture of Orchids in vineries and greenhouses as then contrived and managed, and anyone embarking in their culture now who does not make them and not the Vines the principal object will only meet with disappointment. I say it with all due deference, and with as great a liking for orchidaceous plants as any one can well have, and a desire to see them more extensively cultivated, that Orchids and Vines cannot, and are not successfully and perfectly grown in the same structure, though I admit that Orchids of certain species may be grown perfectly in a vinery, but the Grapes must be made secondary to them. To have Grapes in perfection everything must be subservient to the Vines. I write this as a gardener, and not as an enthusiastic grower of plants of my particular liking, for though employers may wish to grow all they can, and a little of everything in one house, it is only fair to the gardener that they should know that Grapes grown in a house filled with Orchids must not be expected to compete with those produced at Trentham, Knowsley, Keele Hall, or Garston. I think it very necessary that this should be known to employers, and if they are prepared to have Orchids grown in vineries (as they can, and well too), along with Grapes, which though not so fine as those of Mr. Meredith, of Garston, are, nevertheless, perfect for table, then the matter is at an end, it being well to set out with a clear understanding, for disasters will come thickly and often enough without commencing with a mistaken idea of what we are going to do.

It is well to observe that cool-house Orchids are not to be grown in greenhouses in which *Epicrises*, *Heaths*, *Ilesche-naullias*, *Eriostemons*, *Boronias*, *Pimeleas*, and similar plants are expected to be grown as specimens, which for good foliage, form, and profusion of bloom are fitted for the exhibition table.

These plants require too much air, and an atmosphere altogether unsuited to Orchids, though many of the last would fare better were they placed in a Heath house in winter, rather than stewed and broiled alternately as they are in many so-called Orchid houses, with no equal in point of night temperature and evaporation, often no better than a stewing pan. I have in previous communications entered more fully into details of the culture needed.—G. ABBEY.

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

(Continued from page 211.)

WE will now return to fig. 1 [We here reproduce the woodcuts mentioned, for convenience of reference], and train the Vine during its second season, as it will by this time have made sufficient growth to assist my descriptions. When ten or a dozen shoots, or more, burst forth on a young Vine where seven

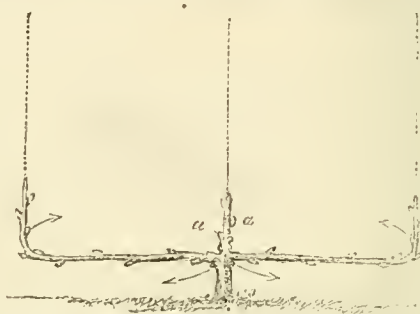


Fig. 1.—First year's appearance at the November pruning, the dotted lines showing the places to which the unripe wood is cut down. The arrow heads show the buds from which laterals are to be produced in the following year. *a, a*, are the trial buds.

ought to be—the right number for the development of a proper model—by degrees remove the superfluous shoots by the finger and thumb, and leave seven only to take their course upon it. Make them equidistant as regards their positions. Let there be two leaders, and two shoots below at the base of the horizontal or main stems, as I will now call them, in a line with the arrow heads; give one vertical shoot to draw the sap, and train two inwards just above the bend of the main stems. Allow that vertical shoot, and the extreme shoots on the main stems, to take their upright course and grow without hindrance, and do not fail to secure them to the wall with nails and shreds, but do not press the shreds too tightly round them, as that would stop the free circulation of the sap. Stop the pair of shoots under the main stems, and their corresponding young branches above them, when they have made about six joints each. For the satisfaction of the cultivator, to prove whether he has been supplied with the right sort of Grape, the trial buds, *a, a*, may each be permitted to bear a bunch of fruit, thinning their berries well out, but do not tax the strength of the Vine beyond that for the present season, and bear in mind that fruit is most sure to arrive at earlier maturity, and never fails to appear, on the young branches which are cultivated specially for the purpose in the previous year. I give this caution, otherwise those who are only accustomed to grow Vines in a hothouse might induce you to prune the canes after the fashion that a schoolboy would a walking stick, on the single-rod system, without considering that in a hothouse nature is encouraged by artificial heat. Even in my cool vinery and orchard house I always allow the young bearing wood to be matured one year for bearing the next, on the system that I now advise for out-of-door culture, and I have never yet failed to produce crops of Grapes. These fruit-bearing shoots for next year will endeavour to push forth fresh spray at the joints below which they were stopped, but they must not be allowed to do so. As soon as they offer a fresh growth of three leaves, pinch the points off their succulent ends to one leaf, and so on continually till growth cease. Operate on all lateral spray by degrees as advised last year, stop the main stems in October, shorten them to their ripened wood, cut the central branch, with those that bore fruit, completely away in November, and the training and pruning are completed for the second year, as seen in fig. 2.

At the beginning of the third year the system of training for fruit in the future is to begin in earnest, so some consideration

must be given towards the disposal and proper distances of the bearing and secondary main stems on the house front. Where windows occur the genius of the trainer must avoid them by bugging their outlines as closely as possible. The ultimate vertical growth I allow depends upon the height of the walls or the strength of muree to raise the longest ladder to be had. Two feet apart is the distance I allow between each

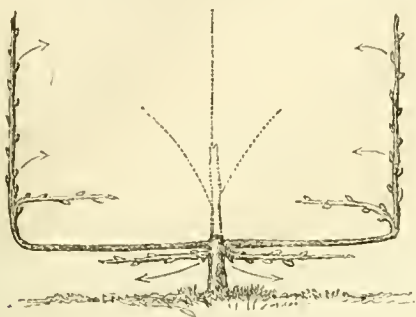


Fig. 2.—Second year's appearance, and the places occupied by the laterals produced by the trial buds during the second season.

pair of fruit-bearing shoots—viz., at 2 feet, measuring from the ground level, allow a pair of opposing buds to grow from the main stems, train them horizontally to meet, or for that matter they may even pass each other for two or three joints, and then stop them by pinching off their extreme points as above stated. Possibly three tiers of fruit-bearing shoots, at 2 feet apart, may be achieved this season, bearing strictly in mind that they are to be reserved for fruiting next year; therefore, which is often the case, when they attempt to form a bunch in the present year, without hesitation pinch it away.

The young shoots which burst from the eyes of the special bearing branches will each show for two or three bunches of Grapes. They must only be allowed two bunches each, and as soon as their young shoots have grown to the length of four or five joints beyond the second bunches, whether they are in blossom or not, pinch-off the points of the shoots, and eventually, as soon as the Grapes are set, leave only two leaves before the fruit, or three if the wall is not too crowded with foliage. Secure the shoots to the wall with shreds and nails, as soon as possible, in an oblique manner, both above and below the branch, and one may be secured horizontally to it with a piece of zinc wire, or a tie of some sort, and those shoots which occasionally grow with no fruit upon them must be at once rubbed off. So also treat every one of the young succulent shoots that push on the old wood of the stems, for there they are not wanted. Any laterals that are formed should be pinched back to one leaf when they are quite young.

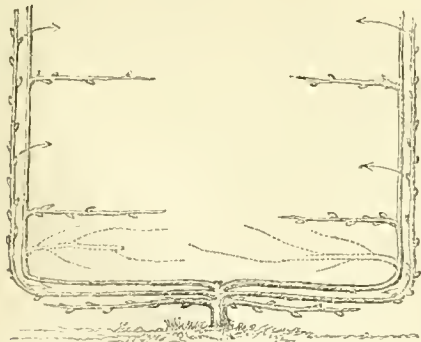


Fig. 3.—Third year's appearance at the November pruning. The laterals, having produced their fruit, are to be afterwards completely cut off to the mother branches, as shewn by the dotted lines.

When the Grapes have attained the size of early Peas, a few prime bunches may be sorted out for eating, and be thinned out with sharp-pointed scissors sufficiently to allow the operator to perceive when the berries remain with space sufficient to admit quite thrice their circumference between each other; at the same time the finger and thumb should be discreetly used to prevent all overcrowding of young lateral spray, which at this time tends more than anything to the encourage-

ment of mildew. As will be seen by fig. 3, no central shoot is encouraged for the future; but the secondary main stem must be allowed to grow unchecked outside of the first, and a third provider for the future encouraged to grow from its junction at the main stem, immediately beneath it. These three stems, or more properly six stems right and left, and the young shoots for next year's fruit, maturing themselves horizontally, as shown by the arrow heads, between the fruit-bearers of this year, will prove quite sufficient, as it is always advisable to maintain growth, so as to encourage vigorous root action, without which a short life, and possibly not a merry one, will be the result.

What I advised the two previous autumns relative to the disposal of the laterals, and by pruning back to well-ripened wood, need not, I think, be repeated; but I will add a few remarks as regards the chief operator—sunshine. It will probably be advisable in cases of rude health, to deprive the Vines in this and future seasons of about one-fourth of their leaves during the first fortnight in October, singling out those which underlay, or are less matured than others; for the foliage which is at this period of the most importance is that which has arrived at its full substance and maturity, and is capable of giving to, instead of taking from, the Vines' resources; even a matured leaf is less capable of doing so when overlapped by another revelling in the full power of the light and air. I must make another observation also about leaves. How often do we see people plucking leaves from a Vine, when wanted to garnish dessert dishes, &c., quite indiscriminately, and without thought of what they are doing? The leaves they choose are, in nine cases out of ten, amongst the finest and most prominent at hand, the very foliage which the Vines most require to develop the buds at their axils to the last stages of their maturity. Deprived of them, the proper development of the buds is brought to a comparative standstill, and in all probability the Vine rendered unfruitful, or nearly so, in the following year. This is like depriving a man of one of his lungs. Nothing looks better than a fresh Vine leaf round butter in the market—under its cool refreshing influence the butter is worth a penny a-pound more; no garnish can be more appropriate for the dessert; but either grow Vines especially for their leaves in an out-of-the-way place, or pick the leaves with discrimination. When I break off a Vine leaf by accident, I always stay to observe whether it is from a bud whence I calculated upon Grapes for the following year; if so, out comes my knife, and I slice off that bud down to the very quick. I have learnt that without the leaf to carry out its functions to the very last I can place no confidence in the bud.

The shoots which fruited in the third season, as shown in fig. 3, are to be cut entirely away quite close to the main stems, without leaving any snags, in November; shorten then all the young branches and leaders to well-ripened wood. I shall at once pass over the rigours of the winter, into the fourth season of which much need not be said, as the general routine management is a mere repetition of the foregoing, and extended opera-

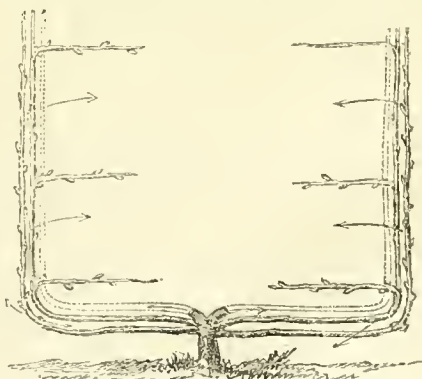


Fig. 4.—Fourth year's appearance after the November pruning, showing how the first main branches are cut away, as represented by the dotted lines. The arrow heads point out where new ones are immediately to be trained in their places.

tions would have to go on customarily, as providing for bearing wood, deprivation of laterals, stopping, pruning, &c. I will mention, however, that the breaking of the buds must be well considered, so as to carry on as even a balance as possible for the tree, as well as to please the eye as regards uniformity of shape. It will be well known to the trainer by this time, that

the young succulent shoots in their tender nonage require most careful handling, and are easily disunited from the branch or broken; though it is also necessary, as early as possible, to begin training the fruit-bearing shoots for the next year, in order to get some of their leaves into early maturity, so as to remain proof against mildew—that is the grand secret. But should there not be a bud to break at any particular distance on the stems, so as to appear exactly central for training the young shoots between the horizontal bearing branches, shoots may be led either up or down, and if low down, always from the outside stem during the first four years, or till the first stem laid-in is cut entirely away should it be left for a longer period, as there is no plant more accommodating than the Vine in allowing its shoots, when a little matured, to grow and be bent into almost any desired position at the will of the trainer. For example, see the arrow heads at the base of *fig. 4*, also the direction they take from the places where the first main stems were cut away at the November pruning. Young shoots to form new main stems will spring from thence in the directions there shown, and so on alternately for years. Three of my Vines have already been totally renewed after this manner five times over, and this season they are showing for blossom; if possible, more vigorously than ever.

Now, whilst the Grapes are ripening, I will endeavour to initiate my readers into the mysteries of making wine from their juice. As wine-making in its general features is mainly the same whatever be the kind to be made, I will show how I manufacture those very respectable and easily-made beverages Rhubarb and Gooseberry wine. The latter fruit will be at its best for this purpose about the time that my notes appear in print.—UPWARDS AND ONWARDS.

(To be continued.)

THE FROST OF THE 29TH OF MAY cut off the Scarlet Runners in some places to the ground, and Potatoes are very much blackened in Buckinghamshire, Middlesex, and elsewhere.—NASH.

NOTES AND GLEANINGS.

We are informed that Mr. BARNES, the skilful manager of Lady Rolle's Bieton gardens and estate, with which his name has been connected for such a long series of years, is about to retire, after having distinguished himself in every branch of culture. His frequent contributions to this and other gardening periodicals were invariably marked by strong good sense, thorough originality, and an amount of practical knowledge which but few men possess in an equal degree. It is to be hoped that in retiring from his active duties, he will find more leisure to impart to the horticultural world the results of his long experience.

We regret to have to announce the death of the Rev. Dr. SMITH, of Ecclesmachan, N.B., who has for many years been well known as a prominent writer on horticulture. The event took place at The Manse, Ecclesmachan, on the 30th of May.

WORK FOR THE WEEK.

KITCHEN GARDEN.

EMBRACE the first opportunity afforded by the ground being moist for thinning *Carrots*, *Onions*, *Parsnips*, *Beet*, and the succession crops of *Turnips*; and, presuming them to be all sown in drills, let the hoe be run between the drills, not merely skimming the surface of the soil, but moving it an inch or two in depth; this, while it cuts up the weeds, also checks rapid evaporation, and pulverises the soil. Pay constant and persevering attention to the watering and shading of all advancing crops recently planted out. Give recently-planted *Celery* copious waterings once or twice a week. The method frequently pursued of giving plants in the open ground a small drop of water every evening or morning, cannot be too much deprecated; such sprinklings cake the ground and lower the temperature of the soil, without any corresponding benefit to the plants. Make a small sowing of *Red Beet* and *Horn Carrot*. The former, when sown early on rich soil, becomes too large and coarse, and does not retain its colour in boiling, nor look so well in salad as that which is smaller of the same variety. Stake *Scarlet Runners* after drawing a little earth to them with the hoe. Where it is intended to keep them dwarf, and not to stake them, let the leaders be pinched off. By constant attention to this stopping of the leaders as they advance above three or four joints in height, the plants will be induced to bear well.

The latter mode of culture should only be resorted to where sticks cannot be easily procured.

FRUIT GARDEN.

Still continue active operations against aphides and other pests of fruit trees, or their ravages will spoil your best hopes of a crop. The shoots of Cherry trees infested with the black fly should be dipped in tobacco water immediately they are detected, to prevent the shoot from curling, which would stop its growth. Either pick off with the hand, or apply a wash of lime and clear foot water to Gooseberries and Currants infested with the caterpillar. This increases so rapidly, that a constant watch must be kept up for some time. Pinch back all shoots of Currants not wanted for wood. The fruit of Gooseberries, &c., like fruits of more value, will be considerably improved by the summer-stopping of the young wood—a fact well known to those who have paid attention to this mode of pruning, which is much better understood on the Continent than in England. The high temperature of the last year has favoured the successful cultivation of the Vine on open walls and buildings; attend to the stopping of the shoots, keeping them thin and duly nailed, thinning the berries when they are of the size of peas. It is found that the best way to prevent evaporation after watering the roots of newly-planted fruit trees, is to cover the surface of the ground near the stem with some wet straw tied in two or three bundles, which is much better than loose litter or dung. Give Strawberries a thorough soaking after the blooming period, and put short grass from the mowings of the lawns between the rows to prevent the heavy rains from soiling the fruit. Thin the shoots of Raspberries to two or three of the strongest, if not already done. Disbud Fig trees, retaining no more wood than is required for the next season.

FLOWER GARDEN.

All plants newly planted will require constant watching, as under the best management failures will sometimes occur; these should instantly be made good, and the tying and staking of everything requiring support on no account must be delayed. Where an immediate display of flowers is not wanted the buds may be pinched off for a week or two, to encourage the plants to cover the ground. Remove Pansies, Anemones, double Wallflowers, and other spring plants as they go out of bloom, to make room for autumn-flowering ones; the beds will, however, require to be made up with fresh compost. Put in cuttings of double Wallflowers, Pansies, &c., for blooming next spring. A shady piece of ground, or reserve garden, should be appropriated for the above. In addition, a stock of the more showy herbaceous plants should always be kept on hand, as well as the spare bedding-out plants, so that in case of failures or alterations a supply may always be ready for immediate planting. For large places a reserve ground of this kind is necessary, and scarcely less so for those of small extent, as a continuous show of bloom cannot be kept up without a reserve stock being in readiness for removal whenever wanted. Climbers against walls or trellises should be constantly gone over to tie or nail them in. Standard and pillar Roses should likewise be looked over, to see that they are properly secured to their stakes. Eradicate all the broad-leaved plants and coarse-growing grasses from the lawn, which they much disfigure; keep them closely cut with the scythe or machine. The awning may now be taken from the Tulip bed, and the foliage of the plants exposed fully to the action of the sun and rain. In late localities many will be in full bloom; care must still be taken to mark those seedling breeders which have good properties, choosing those with good-formed cups, clean both in base and stamens, for perfect purity is now absolutely required. Ranunculuses will be making rapid growth; always water in the evenings, and with water which has been exposed to the rays of the sun. Tie-up and disbud Pinks, and as the buds increase water with weak liquid manure. Carnations and Picotees require similar treatment, and when more shoots spindle for bloom than are required, let them all be cut off except one. Water Auriculas and Polyanthus as they require it, and keep the pots free of weeds. Stake and water Hollyhocks freely, and attend to previous directions with regard to Dahlias.

GREENHOUSE AND CONSERVATORY.

The climbers will require attention to keep the current year's shoots within proper limits. Avoid everything, if possible, like formality in arranging the branches, and provided, at the winter regulation of the plants, the main shoots were trained to occupy the desired position, the young wood may be allowed to a considerable extent to follow its natural mode of growth,

if this do not create confusion, which is as much to be guarded against as a strict formality. Hardenbergias, Kennedys, &c., may be slightly cut back after blooming to induce a new growth. Water should now be given liberally to plants in open borders, except those very recently planted. Use the engine whenever it can be done without interfering with the visitors; either early in the morning or late in the evening will at this season be found the most suitable time, that the house may become dry and airy before it is visited. The display of bloom must be still kept up; as there is now a larger number of plants to select from, considerable variety may be secured at each regulation of the inmates. Keep all plants in the house in the neatest order. Shade daily when requisite, and give air in proportion to the state of the external air. The stock of Balsams and other annuals grown for filling the various places in the greenhouse, &c., should be encouraged by frequent shifts; keep them in bottom heat and near the glass, pick off the early-formed flower buds if the plants are required to attain a considerable size before being allowed to bloom. Continue to train Kalosanthus neatly, and water with liquid manure occasionally. Specimen Scarlet Pelargoniums should likewise have liberal encouragement to grow them on. Common and Fancy Pelargoniums for late blooming will thrive better in a somewhat shady situation, and the latter especially, where they can at the same time be protected from heavy rains. Fuchsias, if not in their blooming-pots, should be potted forthwith. Train in the desired form, and pinch back weak and straggling shoots. The glass must be taken entirely off Japan Lilies, Gladioluses, &c., unless early blooms are desired. Keep a portion in the shade of a north wall for a succession of bloom.

—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

NOTWITHSTANDING the showers, vegetables, &c., do not grow so fast as might have been expected, especially in heavy soils. Three things seem to grow remarkably well with us—Cabbages, which we never recollect growing faster in the same time, and, therefore, so far a great advantage, as Broccoli is nearly out, and Cauliflower not yet plentiful; grass, a great advantage as regards the pastures and meadows, but making incessant work with lawns (corn crops in general looking much in need of sun to succeed the showery weather); and weeds, which rarely, if ever, had a better season. We have been often surprised, when, after surface-hoeing in a sunny day, the same ground after a wet day or two, if looked at attentively, would show numbers of almost imperceptible weeds greening the surface again. Where they come from is a marvel. It would appear that land in general, and old gardens in particular, if nothing else, are warehouses of weed seeds, which only require to be brought within reach of the atmosphere and the necessary amount of moisture to vegetate. What sometimes has puzzled us is, that seeds kept in a damp place, but rather closely shut up, soon mould, and lose their vitality; but seeds kept in the moist soil too deep to come within reach of the oxygen of the atmosphere do not seem to mildew, but preserve their vitality for years, and only require to be brought within the reach of the atmosphere to vegetate and flourish, just as if they had left their seed vessels the previous season. Some of the prominent annual weeds, as Groundsel, &c., we have endeavoured to prevent seeding for many years, by having them cut or pulled up long before they come to the seeding state, and yet year after year every turning by trenching-up fresh soil gives us good crops of these annual weeds, which shows how thickly and securely the seeds are imbedded in the earth. Last summer we passed a field of what ought to have been Turnips, but Groundsel and Sowthistle were the most prominent crops; and as the pretty winged seeds were flying and falling in every direction, covering even our garments as we passed through them, we could not help thinking that the easy-going farmer was laying up in the land a good stock of these seeds, to prevent anything like a scarcity of them being felt for half a century. All that the best cultivator can do is to cut them up as soon as they appear, but whenever he turns up his ground afresh, he will find that he will have plenty of work from the buried seeds springing up as vigorously as if they had been newly sown. We have no correct data for ascertaining how long seeds will retain their vitality when buried beyond the reach of the atmosphere in the ground, but as far as our experiments and observations go, we should say that they would retain their vital powers much longer than they could

be coaxed to retain them in one of our best seed warehouses, however carefully kept. Some time ago we saw a large garden that for particular reasons was left to itself for a year or two. Such splendid annual weeds we never saw; it would have been a vast saving for the future to have sown it in corn or Clover, which would so far have prevented the weeds obtaining the mastery. In that garden enough of Groundsel could have been found to supply the cage birds of many counties. We felt that work for the hoe, from one season's neglect, would thus be provided for half a century.

So far as our observation and experience go, Groundsel, Sowthistle, and Chickweed, are the annuals against which the greatest care should be taken to prevent their reaching the seeding state. To prevent this, the plants must be cut up in a sunny day when small and young. Cutting them up when in bloom is of no use, if there should be dull or showery weather afterwards, as the plants possess enough of succulence in the stems to mature the seeds. We have proved this often with Groundsel and Sowthistle. It makes even the slovenly more careful, to reflect that such weeds allowed to seed, would not only give work to himself, but to future generations as well. Last summer and autumn we saw Thistle-down in perfect clouds, enough to fill whole fields with Thistles, and which would have been done if the scorching sun had not dried the vitality out of many seeds, and the small birds had not devoured a good lot of the remainder. If a man should be so careless and ignorant as thus to injure himself, he should be prevented from injuring his neighbours, just as our sanitary laws prevent a man, however indifferent himself, creating a nuisance and a source of disease to his neighbours. If a man cannot keep Thistle-down and Groundsel-down to his own premises, there should be some obligation laid upon him to prevent him allowing that winged seed having free access to the ground of his neighbour. When with all care these seedlings appear, the best plan is to cut them up as soon as they show themselves, with a shallow Dutch hoe, and choose a bright day for the purpose, that the sun may shrivel them up. For this purpose a shallow hoeing is best, as the seedlings shrivel up more speedily and it does not bring more seeds near enough the surface.

Forking the Ground amongst Vegetables.—This is not so necessary in light as in rather stiff soils, but it was very necessary with us, as the rains had battered the surface, and the ground being somewhat moist was kept cool by evaporation. The ground on the whole was cooler in proportion than the air, except on the frequent frosty mornings. Stirring the surface among Potatoes, Cauliflowers, and other growing crops, allowed the air and warmth at once to enter. No advantage was thus gained by heat, except that which the higher temperature of the air gave, and the air had freer access to the roots. We thus for a specific purpose were willing to neutralise the benefits of the mere conduction of heat to the roots. Than the surface-stirring in such circumstances, nothing seems more fitted to give such plants a fresh start into vigorous growth. For this purpose a light fork is just as useful as a clean Dutch hoe for cutting-up small weeds. This surface-hoeing cannot be too often done, even though few weeds are seen.

Birds and Red-headed Seeds, &c.—We find that small seeds are untouched, and the first sowing of Peas and Beans was not meddled with; but we find that in later sowings of Peas and larger seeds both birds and mice have attacked them, especially after germination had so far taken place that radicle and plumule could be seen advancing. In some such cases where the debris was left we could discover the coating of the lead left on the outer rind of the seed, whilst all the interior was cleared out. Traps became our only remedy then, and of all baits nothing is better than old toasted cheese. We would have treated the birds to strong poison, but then pheasants might have eaten it. Our earliest Peas have suffered greatly from sparrows, which are sure to abound where pheasants are fed near the garden; and though we tied strings and flags of white paper, &c., the points of the shoots, the youngest leaves, and the blossoms disappeared day after day; these depredations being so much confined to the earliest crops out of doors, that we would have been in a difficulty had it not been for the forward ones in the orchard house. Guilty, however, as the thievish sparrow was, he was not the only culprit. One morning between three and four o'clock, contrary to general observation, four pheasants and three partridges were on the Pea stakes, and making their morning meal of young shoots and blossoms, and seemed quite agreed in their work of plunder. Their being together was rather a novelty to us, for, as a general rule, birds of a feather, and beasts of a skin or fur

keep together. You may every day in a fine park see sheep, and oxen, and deer living happily and harmoniously together; but you will rarely, if ever, see them congregating in mixed groups for repose. Even as they feed they will generally be found distinct in their groups, and thus tend to produce more variety than if they were mingled. Seldom, even, will you find hares in abundance close to where rabbits burrow and have their warrens; a fact ignored by some of our greatest sportsmen, who, wishing to have abundance of both close together, so far fight against nature, and thus so far fail after much money has been spent. We presume, however, that when plunder is the object, there is for the time a suspension of all discordance in distinct families. Partridges and pheasants generally keep themselves to themselves, they do not seem to cross each other's path at all; but the other morning early three partridges and two hen pheasants were very busy in the Onion quarter, pulling up and eating with the greatest gusto. We have long known how grateful young Onions were to young turkeys and even other domestic fowls, but we did not find out until this season how partial some of our wild fowls were to the same heating condiment. Is it because they are daily becoming more like barn-door fowls? Why should not a pheasant daintily reared become as social and homely as a domesticated fowl?

Red-coloured Seedling Plants, and Birds.—It would be interesting to know how our readers fare in this respect. At Stockwood we noticed long lines of Beet with the bright-coloured leaves wholly untouched, though not protected in any way. For years we have not been able to keep a single plant, unless protected by netting, or by planting the seedlings out when 3 or 4 inches in height, and then the birds did not seem to care for them. The stable-yard at Stockwood is as near the garden as ours. The trees in the park and pleasure grounds are much the same, so that the attractions to birds in these cases are about equal. The farm buildings at Stockwood are much farther off, and thus the garden is saved from being a great rendezvous for sparrows and other birds; and there, again, there is no rearing and feeding of winged game near the garden. Be the reason what it might, the Beet was healthy and untouched, and not a single leaf, blossom, or pod, of the earliest Peas seemed to have been touched. But for frequent sprinkling with soot and other unsavoury substances, we should not have saved leaf nor stem of our earliest Peas, after they were staked and growing freely. The stakes were fine perches for the birds. We looked for their company in plenty, as the pods became rather more than half full, but we were never so much troubled before by their depredations on shoots, blooms, and leaves. We would soon have made short work of hoats of sparrow, but for the cruelty of doing so, and that anything set for them would likely be partaken of by more valued birds. We have known pheasants poisoned by baits set for rats, where no birds could reach them, but the rats, after having had a share, had carried the baits out, and left them exposed.

ORNAMENTAL DEPARTMENT.

With a few warm days after the 23rd, we began planting-out our bedding plants on the 26th, though even then the ground was too cold, and far too wet to please us. By Thursday night we had a good deal of work done in fair condition. The state of the ground, however, in our heavy soil forced us to resort to one of our old contrivances, so as to give the plants a good chance, as we have no faith in placing the plants in a hole that is little better than a marsh. But for having so much to do, and for being later than everybody else, we would have waited for the drying of a few sunny days. The contrivance was, as the hole was made for the plants with a trowel, to surround the ball or roots with a little rich, light, rather dry compost, which was thus warmer than the wet soil. This compost was made by riddling some old exhausted materials from Mushroom beds through an inch sieve, the old bed having become rather dry, and most of the material being forced to pass by drawing the hand firmly over it in the sieve, this forming about a half of the compost. The other half consisted of about equal proportions of soil on the whole rather light, riddled from beneath the potting bench, a mixture which we find very useful for many purposes, and the other half riddled soil, that had been brought from the sides of a road, and kept dry under cover. To about six large cartloads of this mixture, light and good on the whole, we added about a bushel of soot, and two bushels of flonry lime, turning and mixing all well together, the latter being added as we noticed that the worms were more plentiful than usual in the damp beds and borders. In using this compost, we find the most expeditions mode is to lay it

down in small spadeful on the beds or borders to be planted, and then work it in round the balls with the trowel, firming with the hands in the usual way.

Perhaps we are wrong in using the latter expression, "usual way," for we find that few men, if not looked after, will make the right way the usual way. Some time ago we described the right way of planting with the dibber, showing that a perpendicular thrust of the dibber to make the hole, and a more diagonal thrust, bringing the dibber then nearly to the perpendicular, to fix the plant as in a vice, were all that were essential, and much better than many strokes, that after all left the plant hung or unfastened. By attention to this simple rule one man in pricking-off seedlings will do more than double the work, and better and more easily for himself, than another man who never knows or cares how many strokes of the dibber he must give. Just so with planting. When the plants have less or more of a ball of roots, the right way is to make the hole large enough to receive the ball without any undue pressure, and then to fix the earth with the hands round the sides of the ball, firmly enough to keep out the undue entrance of air, but not so firmly as to hurt or crush the roots. The usual way with the inexperienced, and even many who ought to know better, is to be rather careless of the size of the hole, and to squeeze the ball down, exerting the pressure of fixing from above, instead of at the sides. If when plants with fair balls are so planted, and show distress by flagging almost immediately afterwards, those who take the trouble to examine for themselves will find that in many cases the ball is broken, the roots ruptured, and the soil immediately beneath nearly as hard as a pan from the perpendicular pressure. More as to future well-doing depends on these matters than is generally imagined.

One other help to future success in planting flower beds where the soil is rather wet and stiff, is never to set a foot on the bed or border; and if surrounded by lawn or grass verges, to be equally careful not to trample on that part where grass and earth meet. A few light boards of different lengths will keep all right in this respect, prevent all trampling of the soil, and all injury to the grass verges. Some stiff soils when trampled when wet, never become properly pulverised and aired all the summer, but remain little better than blocks of brick and pieces of iron. We once set a really first-class labourer to plant the front rows of a ribbon border, with strict injunctions as to the boards, as border and grass were a little damp. He was too wise for us when our back was turned and used no boards, and the trouble and labour we had in making that trampled verge right were such that it would have been true economy to have paid the man treble wages for doing nothing.

Brushwood Supports.—On Friday, the 28th, we were stopped, it having rained heavily and almost continuously for the best part of twenty-four hours. Out-door work was out of the question. Much pricking-off and potting was forwarded, as in the case of Achimenes, Feathered Cockscombs, Balsams, Rhodanthes, Gomphrenae, and other everlasting and tender and half-hardy annuals, but much was done in preparing branchy sticks of different heights for the beds, to suit different heights of plants. Many sheltered places need nothing of this sort. We cannot, exposed as we are to sweeping winds, do without them, and we fancy that many places would present their beds in better condition if such a plan were at least partially adopted. Plants in full bloom, swept into bundles with the wind, can never be brought back into their places and look as they did before. We could never keep straight lines in ribbon borders without such aids. Small straight sticks would be of little use, and it would be almost impossible to get hold of them; we greatly prefer little twiggy branches, such as old birch brooms when worn out, or points of branches such as are used for pea-sticks. What we like best are spruce branches that have lain long enough to have lost all their foliage. The next best are larch branches that have been cut in winter. As respects both, we much prefer them when the bundles or faggots have been used previously as the bottoms of hay or corn stacks, for the weight above them makes the branches straighter than they would naturally be. The more twigs there are on such little sticks we like them the better, as the shoots of the plants become interlaced among them. One tie is generally all that is given to each plant, and in doing this work the same care is taken not to tread the soil as in planting. These twigs act first as a sort of protection. As the heights of the plants are known certain-sized sticks are used, and though seen at first they are all concealed before the beds arrive at their full beauty. Spruce lasts with us the longest. We have had the same twiggy branches for four or more years. Larch, owing to its resinous

quality, comes next, and then, perhaps, beech. Most other woods last only the season, but we frequently take what we can obtain. Common laurel is good after it has lain long enough to lose all the foliage. In forming these sticks a man soon makes the top twigs somewhat uniform with a sweep of his knife, and one stroke with a sharp knife at the base is sufficient for pointing a small stick, and two for a rather large one—matters of importance where they are to be used by the thousand. Two cuts, or three at most, will point a stick as thick as an ordinary finger.

As to planting and preparing for planting, no bedding plant, be it what it may, should be bedded-out with the roots dry, or the soil about them dry, and it is also well in many cases not to turn them out when freshly watered. Better have it done some hours previously. When there is soil about the roots it will then hold better there. In small places there is no better plan than turning the plants out of pots, and if at all matted with roots, running the fingers up the sides of the ball, to disentangle the roots gently before planting, so that they may go at once into the soil of the bed or border. Where much in this way is done, combined with economy, pots are to a great extent dispensed with. Fibrous-rooting plants, as Calceolarias, Ageratums, Salvias, Verbenas, Lobelias, &c., we consider are better without them than with them. Of course we are speaking of plants raised where they are to be planted, not raised and treated for the market. For instance, our own Calceolarias were inserted thickly as cuttings in a cold pit in the end of October, were taken up and planted in an earth pit in the end of March and beginning of April, and now are strong plants with large balls to each. We have planted-out all kinds of bedding Pelargoniums in the same way, but they do not rise so well with balls, and if the earth fall from the roots, though the plants ultimately do quite as well, they are apt to flag for a week or two at first, and lose some of their best and largest leaves. As tending to save trouble and watering, we find that with the tenderest of them it is a good plan to take the struck cuttings in spring, put them into small pots, and when established turn the balls into an earth pit, and when taken to the flowering beds the roots will be proceeding all round the balls ready to go into the soil at once. These receive less check than plants from pots with roots matted round the ball. At one time we tried a handful of moss, covering soil and roots inside, the moss thus securing a ball at planting-out time; but the chief objection to the use of moss is that if, after planting-out, it became thoroughly dry in the bed, there was hardly a possibility of wetting it again, and, therefore, the roots near home became useless.

For home use, such fibrous-rooted plants as we have alluded to do better when planted-out temporarily, and then raised and taken to the beds. Several times, and especially this season, we have found plants that did not make fibres freely near home do well if first planted in pieces of turf, and, when well established, turf and all turned out in the beds. We lately described the process. A fortnight or so ago we lifted all those so treated to prevent the roots of the Pelargoniums running down. We examined many the other day when planting, and found myriads of nice, white, fresh roots protruding all round the turf, ready to enter at once into the pulverised soil. We fancied heretofore that the firmness of the turf near the collar of the plant helped to secure free blooming, and less luxuriance of growth. We shall only add that in our damp cold soil we gave only a dribble of water when planting, merely at the roots to settle the soil round them. A rising barometer leads us to hope we shall be busy on the 31st.—R. F.

COVENT GARDEN MARKET.—JUNE 2.

SUPPLIES continue fully equal to the demand, and forced fruit is still abundant. Prices have undergone no material alteration from those quoted last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons.....each	5	0	15	0
Apricots doz.	3	0	4	0	Nectarines.....doz.	12	0	24	0
Cherries.....lb.	1	0	3	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	15	0	30	0
Carrots.....½ sieve	0	0	0	0	Pears (dessert).....doz.	0	0	0	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs.....doz.	12	0	20	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart.	0	6	1	0	Strawberries.....lb.	5	0	8	0
Grapes, Hothouse, lb.	6	0	10	0	Walnuts.....bush.	10	0	16	0
Lemons.....100	4	0	8	0	do.....100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....bunch	0	4	0	6
Asparagus.....100	3	0	6	0	Lettuce.....score	1	0	1	6
Beans, Kidney...bbl.	1	0	1	6	Mushrooms.....pottle	1	0	1	6
Peas, Red.....doz.	2	0	3	0	Mustd. & Cross, punnet	0	2	0	2
Peas, Green.....doz.	0	0	0	0	Onions.....bushel	12	0	14	0
Paris Sprouts ½ sieve	0	0	0	0	Parsley.....sieve	3	0	4	6
Cabbage.....doz.	1	0	2	0	Paranips.....doz.	0	9	1	0
Capicums.....100	0	0	0	0	Pears.....quart	2	0	4	6
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	0	0
Cauliflower.....doz.	3	0	6	0	Kidney.....ditto	4	0	7	0
Celery.....bundle	1	6	2	0	Rushes doz. bunches	1	0	0	0
Cucumbers.....each	0	6	1	6	Rhubarb.....bushel	0	4	0	6
Endive.....doz.	2	0	0	0	Shallots.....lb.	0	0	1	6
Fennel.....bunch	0	3	0	0	Spinach.....bushel	2	0	3	0
Garlic.....lb.	0	8	0	0	Tomatoes.....doz.	2	0	3	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	4	0	6
Horseradish.....bundle	3	0	5	0	Veget. Marrows.....doz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Catalogue of New and Rare Plants. Spring, 1869.*

D. Gold McKay, Sudbury, Suffolk.—*List of Bedding Plants and Hardy Perennial Seeds.*

H. T. Dykman, Haarlem, Holland.—*Wholesale Trade Catalogue of Dutch Bulbs and Flower Roots.*

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

GRUBS (*C. S., Primrose Hill*).—They are the larvae of the Daddy-long-legs, or Crane Fly, Tipula oleracea. The only practical remedy we know is to pare-off 3 or 4 inches of the surface and burn it. The grubs are called Leather-jackets on account of their toughness, and Surface grubs because they are never deep in the soil. They are very destructive, feeding on the roots and young stems of many cultivated plants.

SEEDLING PELARGONIUM (*Ramsgate*).—There are many of the same colour and foliage.

PANSIES.—The name of the exhibitor of the beautiful Pansies, noticed at page 341, as being shown at the Royal Horticultural Society's Floral Committee Meeting, was *Miss Mahy*, not *Miss Maling*.

BOTANY (*A Lover of Botany*).—Begin with Hensley's "Radiments of Botany." You can obtain it through any bookseller. It is very cheap. Using a microscope will not injure your eyes.

WILD FLOWERS (*T. M.*).—The work is not concluded. The last number published is No. 97. Bentham's "Handbook of the British Flora," the illustrated edition, contains woodcuts of the plants.

PRICES OF FRUITS (*J. W. Peglar*).—No department is more difficult to fill than that embracing the market prices. The first column states known wholesale prices, and the second column retail prices, but most of them must vary very considerably according to the occurrence of increased or diminished demand. The retailer must have a very large advance on the wholesale prices to compensate him for losses by decay, &c. No benefit could be gained by discussing the subject.

ROSE TREES EATEN BY WEEVILS (*Whitbread*).—The brown insect is some sort of weevil. We do not think it can be destroyed otherwise than by handpicking. Numbers may, however, be destroyed by placing after dark a white sheet beneath the bushes, and shaking them sharply, when the weevils will fall on the sheet and may be destroyed.

ROSE LEAVES FALLING (*A Lover of Roses*).—"The leaves were so smashed that it is difficult to determine the cause of their falling. I could not discern any fungus, or nibbling of insects, or black blight, which here abounds. The epidermis of the leaf appeared to be swollen, most likely by the drying easterly wind and cold nights. I should not pull off the leaves, but manure and mulch over the roots. When sap is rising, a bad leaf is better than no leaf. If your plants of Jules Margottin and Gloire de Dijon are weak, you did right to pull off the few buds. Till last week the first blooms have not been good; but Charles Lefebvre (the premier Rose), John Hopper, and Leopold Premier, a fine Rose, are now blooming first-rate. I have had a great many buds with green centres, which have been removed. Orange fungus has also been cut out.—W. F. RADCLIFFE."

CROSSING PELARGONIUM UNIQUE WITH ZONAL REBECCA (*J. M.*).—We do not think a cross will ever be produced between the above varieties, there being no affinity between them. That the Ivy-leaved section may hybridise with the Zonals has been proved by the splendid varieties exhibited by Mr. Winstett at the Pelargonium Show last week. This important step has been only gained after a long series of cross-breeding, which has extended over a period of fifteen years (see report of the Special and Pelargonium Show, pages 356 and 357 of last week's Journal).

The history of the above important cross will shortly be given in these pages. French and Show Pelargoniums will not cross with the Zonals.

ZONAL PELARGONIUM LEAF SPOTTED (E. R. W., *Perry*).—The leaf appears as if the plant were grown in too close and rich a compost. There is no remedy but to give a poorer and more open compost. Nothing is better than loam from turf which has been laid-up for six or eight months, torn in pieces, and made rather fine, but not sifted, giving good drainage, a light position, not further from the glass than 2 feet, and admitting air freely. Water carefully until the plants are well rooted in the fresh soil, then water freely when the soil becomes dry, but before the leaves flag.

PELAGONIUM LEAVES CURLED AND BROWN (George Way).—The most likely cause is their being infested with aphids, and the evil may be occasioned by keeping the soil too wet, too close, and badly drained, not giving a sufficiency of air, and not keeping them near the glass; but we can only surmise in the absence of either a specimen or particulars.

VINES BREAKING IRREGULARLY (G. S. G.).—Newly-planted Vines, especially when the roots are uncoiled and laid out, sometimes do not break over strongly at first, unless great care be taken to have the roots in full action. That would not account for the strong Vines in pots breaking so weakly and showing no fruit, if the plants remained in the pots and were top-dressed with rich compost. We should imagine either that the Vines have been rather hurried, or that the wood, though strong, had not been sufficiently ripened. Last summer we saw a house like yours, the Vines planted inside in a good border, with means for the roots to go out, and the young Vines looked very miserable. Watering, as far as surface-appearance went, seemed all right; but on pushing our stick and fist into the border, the cause was at once apparent. A few roots near the surface had been moistened, the bulk were quite dry. We would not think of further cutting back the Vines now, as there is plenty of growing time before them. See that the roots are right.

INSECT INFESTING VINES (S. S.).—The insect infesting the Vines is *Circulio cupreus*, or Copper-coloured Weevil, which feeds at night. Lay a white sheet on the floor and border, and after dark shake the rods and shoots, and the insects will fall upon the sheet, and may be cleared away and destroyed. This repeated a few times will considerably thin them; it is the best means of doing so that we know.

WATERING, MANNERING VINES, &c. (Idem).—The Vines at the fourth season ought to be strong, and should be capable of bearing from 12 to 20 bunches each; but from your description we should think them very weak indeed, and it would have been better to have cut them back to within three eyes of the bottom of the rafter, and taken a rod from each with two side shoots, on which you might have had a bunch each. You would thus have secured a good cane for next year's bearing. The number of bunches you purpose leaving is not too many, but we do not see how you will furnish the bottom of the rods with bearing shoots, or shoots of any kind, without cutting the rods back. They should have water every fortnight or three weeks, a good supply, so as to reach the lowest roots, and not daily dribbles, which do more harm than good. The watering should be continued until the Grapes are advanced in colouring for ripening, keeping up a moist atmosphere by sprinkling or syringing the paths, floors, &c., twice or thrice a day. The Lady Downe's Grapes will set freely, but requires rather more heat than the Black Hamburgh, but from 60° to 65° at night will be quite high enough. You may now water with liquid manure after the berries are set, and again in a fortnight or three weeks. With regard to manning the border, you may now give a dressing of bono dust, and in autumn or winter, after the Vines are pruned, give a top-dressing, about 1½ inch thick, of fresh horse or sheep droppings, and turf cut 12 or 13 inches thick from a pasture where the soil is a loam of medium strength, light rather than heavy, laid up in alternate layers for two or three months, and then chopped up rather finely, adding to every six barrowful one of half-inch bones, the same of mortar from an old building, and a bushel of calcined oyster shells, the whole well mixed. Point the border lightly over, and then apply the above. The stopping of the shoots is right, but the main rod or cane should not be stopped until it reach within 1 foot of the top of the house. We cannot advise about the Apple and Pear trees until you send us a specimen of the insect, and of the foliage attacked by it.

VINES FAILING (R. O. M.).—Your gardener is quite right, the rain from the roof, and especially such a wide one, should not be allowed to overflow on the border; but the appearances on what seemed large and healthy leaves naturally are not what you would expect from this cause. The brown marks and blotches we would attribute chiefly to a sort of scalding from condensed vapour. The remedy will be early air-giving and a little more dry heat in the house. With the early air-giving there will be little or no necessity for the shading. One or two of the brown spots looked like burning from a scratch or notch in the glass; but from that we should have expected larger and whiter marks. It would be worth while to examine the glass, and if you find any of these spots, to cover them with a little white lead paint.

VINES FAILING (A Subscriber of Some Years' Standing).—We suppose the Vines planted by your predecessor on a higher level than the original Vines, were intended to supersede the last-named, and that he intended to cut the latter away, but it seems both have been allowed to grow. Those on the lower level must have their roots much too deep, and the roots of those on the upper level have, from the increased depth of soil, penetrated too deeply. The soil, too, from the heavy manning, we should think has been made very close, heavy, and wet; the drainage may in addition have become choked or defective. Having had no fruit since 1866, we should take away the Vines and make a new border, if it be found, as we think it will be on examination, that the old border needs renewing. We would then plant fresh Vines. There is little hope of the Vines recovering.

PAEFLORA CERULEA NOT FLOWERING (Idem).—Your plants, from being only recently planted out, will make very vigorous growth, and should have the shoots trained rather thinly, so as to give them plenty of light and air. The principal shoots should be trained about 1 foot apart, and at their full length, and the laterals or side shoots between them, and on these the flowers will be produced, cutting back early in spring to within one or two eyes of the principal branch. The shoots must be thinned out where too thick, keeping them nailed or tied up, so as to preserve a neat appearance, preventing too much crowding, and admitting air and light to every part. We think you will have flowers next year, if not this.

BUNCHES OF GRAPES PARTLY SHRIVELLED (T. S.).—The ulceration of

portions of the bunches of the Grapes, now blooming, evidently arises from deficient root action in the Vines. The growth is very vigorous, and the sap supplied is not sufficient to sustain it. We should apply a good soaking of tepid weak liquid manure to the roots once or twice a-week.

DOUBLE-FLOWED STOCKS (F. T., *Dublin*).—You are quite right in supposing that five-petaled Stocks are more likely to produce double flowers, than those having the normal number of petals, and such should be chosen in preference for producing seed. The regular progression of plants in a particular direction depends more on circumstances, as bright sunning and culture, than on the number of petals. We have saved seed carefully from five-petaled flowers, and did not even have at times a single five-petaled one the following year, to say nothing of doubles. We have allowed stout healthy plants with four-petaled blooms to retain only one or two seed pods, and in many cases these produced double flowers. We once made a common Daisy in the course of four or five years a double one, by means of rich cultivation, and flowers less than semi-double would often produce double flowers from their seed. We have often seen double Daisies revert by degrees to their normal single state, when left years in the same place, and starved from want of moving.

APHIS ON ASTERS (Amateur).—The best plan would be to place them in a frame, draw on the lights closely, and fill it on a calm evening with tobacco smoke, covering with mats so as to keep the smoke about the plants as much as possible. It will not injure the plants if the leaves are dry. They may be dusted with tobacco powder, which will destroy the aphids.

WORMS IN FLOWER BORDER (Idem).—Place 14 lbs. of fresh lime in thirty gallons of water, stir well up, and let the whole stand forty-eight hours, then water the border with the clear liquid, giving a good soaking. It will either destroy the worms or bring them to the surface, from which they may be removed.

CALANTHA VESTITA FLOWERING (H. Davis).—Its common time of flowering is winter. It is not unusual for it to throw up flower spikes at this season, but it will be some time before the flowers expand. Let the growth be well perfected. You did right to keep the plant dry from December to March, and to pot it when it began to grow about a month ago. Water rather sparingly until the plant is in free growth, then water freely, keeping a very moist atmosphere, thereby encouraging a good growth, and, that attained, seek its maturation by gradually withholding water, maintaining a drier atmosphere, and giving more air. If the plant is likely to flower sooner than you wish, remove it to a drier and cooler house.

BORGAINVILLE CULTURE (Idem).—The shoot next appears from the foliage to be that of *B. spectabilis*, but the foliage varies much. It requires to be grown in a border of sandy fibrous loam, and so that the roots will be confined to it. Keep the plant dry after a good growth has been made, as it may be for weeks late in summer and autumn, so as to check its vigour and promote the ripening of the wood. The shoots should be trained about 6 inches from the glass, and be kept moderately thin, not allowing them to crowd or overshadow each other.

DICKSONIA ANTARCTICA TREATMENT (J. A.).—The plant whilst growing requires very copious supplies of water, the soil being kept very wet, and at no time must it be dry, not even in winter, but at that season it will not need so much as in summer, and yet the soil must be kept moist. The trunk during the season of growth may be sprinkled with water twice a-day, and the plant's foliage also, taking care not to give it in such quantity as to cause it to rest in the hearts of the plant, but from September to March that will not be required; indeed, it is liable to brown the foliage if persisted in at that season. It succeeds admirably in a vinery having the Vines started in March, and assisted in spring with a little heat in cold periods, and in winter it is enough if frost be excluded. The Vines afford the plant an agreeable shade. It will also succeed in a greenhouse, the temperature in winter 40° to 45°, and in summer 50° to 55° at night, and from 75° to 80° or 85° by day from sun accompanied with air. If grown in a greenhouse slight shade must be given from very bright sun, maintaining a moist atmosphere when growing, and giving a moderate amount of air. The old fronds may be cut away close to the stem when they become brown, which will be the case as the young fronds appear, and are somewhat advanced.

CINERARIAS AND PRIMULA SEED SOWING (Idem).—To have the plants bloom in December and January, the seed should be sown at the beginning of April in gentle heat, pricking off the plants when large enough to handle, and growing them in a cold frame. Plants flowering in December will continue until February; but you may, to make sure, sow again at the end of April. To have Cinerarias in flower in winter, a temperature of 50° at night will be necessary, and the plants must be strong and advanced for bloom in autumn.

CANNAS (Idem).—The Cannas are plants with fine bold foliage, and do well in sheltered positions, but in exposed places become much cut and battered by the wind. They are desirable for giving a sub-tropical appearance in gardens, otherwise they have little merit. Maize should be planted out early in June, and the plants should then be strong and well hardened off.

LIQUID MANURE FOR RHODODENDRONS (A Subscriber).—Rhododendrons may have liquid manure at every alternate watering. You may employ 1 peck of fresh cow dung to 30 gallons of water well mixed and stirred up previous to use. We have no experience in giving guano water to Rhododendrons and do not recommend its use. The best manure that we know for Rhododendrons is cow dung, and in light loamy soils top-dressings of cow dung give the plants a great vigour, and improve the colour of the foliage. Manure water only should be given when the plants are coming into bloom or making fresh growth; at other times it is not required.

GUANO WATER FOR ROSES (Idem).—Guano water may be given Roses when they are in free growth, or once a-week in May, and twice a-week up to October, if the weather is so dry as to render watering necessary; 2 ozs. to the gallon will be sufficiently strong, and 1 oz. if the watering be frequently repeated. Liquid manure may be given alternately with guano water, and will be more beneficial than injurious.

PEARS IN ORCHARD HOUSE (Amateur).—We do not feel competent to answer your questions relative to Pears for the market, as our experience is limited with respect to these, but we may say that in some seasons we found early Pears under glass very sweet and rich, and rich

ones very rich and buttery; but on several occasions we also found in both cases, though fine large fruit, that they had not the usual melting lusciousness, even when treated in most cases alike. We would be inclined to give such trees the shelter of glass until pretty well swelled, and then expose them to the full sun out of doors, or with the glass removed. We have little faith in growing any Pears under glass to take to market, as a profitable speculation, but we may be mistaken.

SOOT WATER (G. Bagley).—To have clear soot water for syringing, &c., you will easily get rid of the thick scum, and the muddy appearance of the water, if you prepare the soot just as you would do sulphur before mixing. Neither will mix freely with water if used at once in a dry state, but will do so readily enough if first made into a paste, by using only as much water as will suffice for the purpose. The more thoroughly every particle is thus wetted, the more easily will it mix with a little water afterwards. For common purposes, after sifting the soot fine, we thus mix it with enough of water to wet it, but if the barrel is empty, we place the soot in the bottom with a quart or two of water, and make it into a paste with an old birch broom briskly used. The broom is kept in action every few pailfuls of water that are added. This will secure the mixing of the soot with the water, but not make it clear quickly. To clarify it, add a little fresh powdered lime—say a pound for thirty gallons. In from twenty-four to thirty hours, after soever, there may be a little scum on the surface, which may easily be removed, but all beneath until you come near the bottom of the vessel, will be as bright and clear as coloured brandy.

CALCEOLARIA AUREA FLORIBUNDA (Guilielmus).—There is no particular liability in the *Calceolaria Aurea floribunda* to curl, canker, or decay, but

all *Calceolarias* are liable to these evils, and sometimes from causes which we cannot discover. Generally *Calceolarias* suffer more from over-kindness than from any neglect. Our temporary beds were quite a sight before we broke-in upon them for final planting out; but even among them we found some with blackish, diseased leaves, which were discarded. These were planted as cuttings at the end of October in a cold pit, 14 inch apart, and not more than one in three or four hundred failed. These were thinned out into earth pits and trenches in March, and protected for a time with mats or calico. It is well to exchange cuttings of these, instead of always propagating from your own plants.

LAWNS MOWERS (A Subscriber).—It does not much signify which is used at the Palace—probably both, for both are good.

INSECTS ON ASPARAGUS (Edward Power).—The small insects sent as having committed so much havoc in your Asparagus beds are the minute *Podura fimetaria*. They occur in great numbers wherever decaying vegetable matter abounds; but we have no proof of their taking the initiative by attacking healthy plants. We believe your Asparagus shoots were ailing from some other structural cause, and were then resorted to by the *Podura*.—W.

NAMES OF PLANTS (H. J.).—*Azalea pontica*, garden varieties (2); *Viburnum lantana*. (W. Phillips).—1, *Myosotis arvensis*; 2, *Veronica officinalis*; 3, *Ceranium molle*. (*Ignoramus*).—*Lopidium draba*. (*Clapham, South*).—1, *Adiantum cuneatum*; 3, *Doodia caudata*; 4, *Nephrodium decursivopinnatum*; 2 and 5 (numbers mixed), *Asplenium ducicidum*, the much-divided frond; and *A. erectum*, the simply pinnate one. (*E. D. O. N.*).—1, *Asplenium furcatum*; 2, *Onychium japonicum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 1st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 26	29.522	29.474	70	46	53	54	S.	.00	Densely overcast; very fine; cloudy, fine at night.
Thurs. 27	29.735	29.630	69	41	58	55	E.	.44	Overcast; cloudy and overcast; densely overcast, cold wind.
Fri.... 28	29.944	29.826	57	42	54	51	N.E.	.38	Rain; heavy rain, cold wind; overcast and stormy.
Sat.... 29	30.132	30.028	54	27	62	62	N.E.	.61	Overcast; densely overcast; clear and cold.
Sun.... 30	30.099	30.051	68	38	62	52	N.W.	.00	Overcast; very fine; overcast and mild.
Mon.... 31	30.189	30.033	62	30	54	52	N.	.20	Densely overcast; stormy; fine and clear, starlight.
Tues.. 1	30.207	30.171	66	42	55	52	W.	.60	Very fine; clear and fine; overcast, brisk wind.
Mean..	29.975	29.893	61.71	38.43	54.71	53.01	...	1.00	

POULTRY, BEE, AND PIGEON CHRONICLE.

BATH AND WEST OF ENGLAND POULTRY SHOW AT SOUTHAMPTON.

ALL parties intimately conversant with poultry shows expect something of a high character at the meetings of the Bath and West of England Agricultural Society, and certainly these anticipations are more than realised, on an inspection of the specimens now open to public view at Southampton.

The number of entries have very considerably increased, and the superior quality of nearly every pen is a matter worthy of the greatest congratulation. Happening so near the time we go to press, our observations are somewhat more brief than we could wish them to have been, and which the circumstances so richly deserved. Everyone who has witnessed former meetings of this Society, knows full well the completeness of all the arrangements, perfection regardless of outlay, ruling all the proceedings. The tent in which the poultry and Pigeons are invariably exhibited is not only of colossal size but replete with every comfort necessary for the well-being of its inmates.

The *Spanish* first meet the eye of visitors, and throughout the whole classes devoted to these birds good specimens abounded, though, as is well known, just after the principal breeding season Spanish fowls show, perhaps, to a greater disadvantage than any other breed whatever, unexceptionable condition being the great feature in show birds of this variety. They were, as before hinted, grand birds, and Mr. Jones may be proud of his position in a competition good throughout. Grey *Dorkings* were very good, but enlarged feet were sadly prevalent, which improved arrangements may usually obviate as to their roosting places, and more especially still in cases where an unlimited grass run is open to them. The *Cochin* classes were capital, and proved one of the most publicly attractive in the tent. Some good Black ones were shown in the extra class, which variety are daily becoming more rare. In *Brahmas* a somewhat general remark among visitors existed, as so many being more or less paralysed, and not a few ruptured ones were shown, otherwise excellent—the results, no doubt, in many cases of reckless over-feeding, a cock in the Dark-feathered ones, and a hen in the Light ones, being especially prominent in these failings. *Game* were all good, but fast losing hard feather. The *Humburgs* though admittedly in numbers somewhat short of the customary entry were decidedly good, and the *Polish* were remarkably praiseworthy. *French Fowls* stood well, but the *Houdans* are fast losing size and weight; the *Crève-Cœurs*, on the contrary, proved advancing. Our previous remarks on the cock and hen classes apply generally to the single-cock classes, of which there was a good display.

Mrs. Seamons, closely rivalled by Mr. Fowler, stood first in Ayles-

burys, and in *Geese* reversed their respective positions. Aylesbury seems the very home of domestic waterfowl, and the astonishment of visitors at the development of size, and “their notious” of the means of its attainment, proved both laughable and unique. A pen of *Rouen* ducklings were well worthy of the position they attained in a class with some of the best adults in the kingdom. *Turkeys* were very superior, and the *Bantams* were beyond expectation.

The *Pigeons* were throughout excellent. Almond Tumblers, Tumblers of any other breed, Pouters, Fantails, Owls, Barbs, Turbits, and the variety class generally, worthily call for especial mention.

It was a matter of regret that just about the time of public admission a heavy thunderstorm passed over, with a great downfall of rain; nevertheless there was a very fair attendance of visitors, and a fine week will do much to ensure this Society a most productive meeting.

SPANISH.—1, E. Jones, Clifton, Bristol (White-faced). 2, Rev. J. De L. Simmons, Chilcomb Rectory, Winchester. 3, J. Stevens, Walsall. 4, E. Jones; H. Lane, Bristol.

DORKINGS (Coloured).—1, J. Smith, Shillinglee, Sussex. 2 and 3, J. Martin, Claines. 4, J. Chit, Dorking. 5, General Dunn, Inglewood, Hungerford; H. Humphrey, Ashington, Hurstpierpoint; J. K. Fowler, Aylesbury. 6, Mrs. A. C. Thynne, Penstone, Stratton.

DORKINGS (White).—1 and 2, Mrs. J. Hartwell, Bridgewater.

COCHIN-CHINA (Cinnamon and Buff).—1 and 2, H. Mapplebeck, Woodfield, Moseley. 3, Miss J. Milward, Newton St. Loe. 4, Hon. Mrs. Sugden, Wells. 5, Capt. Robin, Fontenay, Jersey.

COCHIN-CHINA (Brown and Partridge-feathered).—1 and 2, J. Stephens, Walsall. 3, J. K. Fowler, Aylesbury. 4, Capt. Robin.

COCHIN-CHINA (White).—1 and 4, G. Shrimpton, Leighton Buzzard. 2, Mrs. Williamson, Queanborough Hall, Leicestershire. 3 and 5, Messrs. H. & S. Cooper, Walsall.

BRAHMA POOTRA (Dark).—1, H. Dowssett, Pleshey, near Chelmsford. 2 and 3, Mrs. A. C. Thynne, Penstone, Stratton.

BRAHMA POOTRA (Light).—1, F. Crook, Forest Hill, Kent. 2, H. M. Maynard, Holmewood, Ryde, Isle of Wight. 3, J. Pares, Guildford. 4, Rev. N. J. Ridley, Newbury.

GAME (Black-breasted and other Reds).—1, W. H. Stagg, Netheravon, near Amesbury. 2, P. H. Jones, Fulham. 3, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton. 4, S. Matthew; H. Loe, Appuldurcombe, Isle of Wight; Capt. G. Price, Tynaton.

GAME (Duckwings and other Greys and Blues).—1, S. Matthew. 2, H. Loe. 3, Rev. G. S. Cruwys. 4, Duke of Sutherland, Trentham Hall, Stoke-on-Trent.

GAME (Any other variety).—1, S. Matthew. 2, J. Pares, Guildford. 3, Rev. G. S. Cruwys.

HAMBURGERS (Golden-pencilled).—1, Duke of Sutherland. 2, F. Pittis, jun., Newport, Isle of Wight. 3, W. L. Pemberton, Warwick Square, London.

HAMBURGERS (Silver-pencilled).—1 and 2, Mrs. Allsopp. 3, F. Pittis, jun. 4, Duke of Sutherland. 5, J. Medway.

HAMBURGERS (Gold-spangled).—1, Duke of Sutherland. 2, J. Medway. 3, J. F. Loversidge, Newark, Notts. 4, S. & R. Ashton.

HAMBURGERS (Silver-spangled).—1 and 3, F. Pittis, jun. 2, J. Newick. 4, Mrs. Pettat, Micheldever, Hants.

POLISH (Black with White Crests).—1, T. P. Edwards, Lyndhurst. 2, Mrs. E. Procter. 3, and 4, D. Mutton.

POLISH (Golden).—1 and 2, Mrs. Pettat.
POLISH (Silver).—1, Mrs. E. Procter. 2, P. H. Jones.
FRENCH FOWLS (Any variety).—1, J. K. Fowler (Crève-Cœur). 2, Capt. Robin (La Fleche). *hc*, Capt. Robin (Crève-Cœur); Rev. N. J. Ridley, Newbury, Hants (Crève-Cœur); P. H. Jones.
ANY OTHER DISTINCT VARIETY EXCEPT FRENCH.—1, H. J. Godfray, Hammersmith (Black Cochins). 2, R. Case, Dorchester (Andalusian). 3, J. Hinton, Warminster (Malay). *hc*, J. K. Fowler.

SINGLE COCKS.

SPANISH.—1, E. Jones, Clifton. 2, R. Wright. *hc*, Tonkin & Tuckey, Bristol.

DORRINGS.—1, J. Martin. 2, J. Chisman, Rowhams, Southampton. *hc*, Lord Viscount Tinnor, Petworth.

COCHIN-CHINA.—1, H. Mapplebeck, Woodfield, Moseley, near Birmingham. 2, F. W. Rust, Hastings. *hc*, J. K. Fowler; Capt. Robin; Hon. Mrs. Sngden.

BRAHMA POOTRA.—1, H. M. Maynard. 2, H. Dowsett. *hc*, H. Lee; F. Crook. *c*, H. D. Moore, Brownlow, Bitterne; L. Wright, Kingsdown.

GAME.—1, Capt. G. Price, Tainnton, Gloucester. 2, S. Matthew. *hc*, Rev. G. S. Cruwys. *c*, R. Hall, Cambridge.

BANTAMS (Gold or Silver-laced).—1, Mrs. Pettat. 2, Countess Winter-ton, Shillingale Park, Sussex. *hc*, Rev. G. S. Cruwys. *c*, H. Yardley, Birmingham.

BANTAMS (White or Black).—1, H. M. Maynard. 2, Rev. G. S. Cruwys. *hc*, T. C. Harrison; S. & R. Ashton. *c*, H. M. Maynard; P. Pigott, Woking Station, Surrey.

GAME BANTAMS.—1 and 2, J. W. Kelleway. *hc*, T. W. Anna, Clapham; J. R. Robinson, Sunderland; H. Ling, Dorchester. *c*, H. G. Vincent, Salisbury.

ANY OTHER DISTINCT VARIETY.—1, Lady Heathcote, Hants (Crève-Cœur). 2, M. Nicholls, Peel, Isle of Man (Golden Poland). *hc*, H. M. Maynard (Crève-Cœur); F. Pittis, jun. (Hamburg). *c*, J. Hinton (Silver Poland).

DUCKS (White Aylesbury).—1 and 2, Mrs. M. Seamons, Hartwell, Aylesbury. *hc*, J. K. Fowler. *c*, W. Tippler, Roxwell.

DUCKS (Rouen).—1, L. B. Ricketts, Banwell. 2, J. K. Fowler. *hc*, J. H. Rigden, Hove Farm, near Brighton.

DUCKS (Any other variety).—1, J. Pares (Carolina). 2, S. & R. Ashton (Garganey). 3, F. Pittis jun. (Black East India). *hc*, T. C. Harrison (Mandarin). *c*, T. C. Harrison; H. D. Moore.

GESE.—1, J. K. Fowler. 2, Mrs. M. Seamons.

TURKEYS.—1, W. Fookes, Tarrant Monckton, Blandford. 2, Mrs. Gen. Dunn. *hc*, Capt. Warren, Basingstoke, Hants.

PIGEONS.

CARRIERS (Any colour).—1, 2, and *hc*, R. Fulton, Deptford. *c*, H. M. Maynard (Black); H. Yardley; G. S. Hockley, Durham Down, Bristol.

TUMBLERS (Almond).—1, 2, and *hc*, R. Fulton. *c*, H. Yardley; Master C. W. S. Bulpin, Bridgwater; P. H. Jones.

TUMBLERS (Any other variety).—1, 2, and *hc*, R. Fulton (Short-faced). *c*, C. Bulpin; P. H. Jones (Kites).

POUTERS.—1, 2, and *hc*, R. Fulton. Extra 3, P. H. Jones.

JACOBIANS.—1, H. M. Maynard. 2, R. Fulton.

RUNTS.—1, H. Yardley.

PANTAILS.—1, C. Bulpin. 2, H. Yardley. *c*, Miss J. Milward; Rev. W. S. Shaw, Bath.

OWLS.—1, P. H. Jones. 2, R. Fulton. *hc* and *c*, St. J. Coventry, The Knoll, Wimborne.

TRUMPETERS.—1, C. Bulpin. 2, P. H. Jones.

BARBS.—1, R. Fulton. 2, H. M. Maynard. *hc*, H. Yardley; R. Fulton; P. H. Jones.

TURBITS.—1, R. Fulton. 2, H. Mapplebeck, Woodfield, Moseley. *hc*, H. Yardley. *c*, C. Bulpin; L. F. Perrin, Chantilly, Loughlinstown, Dublin.

NUNS.—1, C. Bulpin. 2, H. Yardley.

DRAGONS.—1, H. Maynard. 2, P. H. Jones. *c* St. J. Coventry; C. Bulpin.

ARCHANGELS.—1, H. Yardley. 2, Mrs. M. J. Bulpin, Bridgwater.

ANY OTHER NEW OR DISTINCT VARIETY.—1, C. Bulpin. 2, H. M. Maynard (Hyacinths). 3, P. H. Jones. *c*, H. Yardley.

Mr. Edward Hewitt, of Birmingham, and Mr. Tegetmeier, of London, were the Judges.

BEVERLEY POULTRY SHOW.

FOR many years past the Beverley Show has stood very highly among our poultry exhibitions, public confidence in the general arrangements being annually on the increase. The aggregate entries at the Show held on the 26th ult., amounted to sixty beyond those in the preceding year. This is very satisfactory, and the display in the floricultural department, incorporated with the poultry Show, manifested no less solid improvement. The Show was infinitely superior to all preceding ones, and the display of both poultry and flowers gave good grounds to expect a large attendance of visitors. The fate, however, ruled otherwise, for though from dawn to 8 A.M. everything passed off most smoothly, about the latter hour the rain commenced in earnest, coupled with a heavy driving wind, increasing from hour to hour until the close of the Show. Ladies and children could not attend, and very few of even the hardier sex braved the incessant downpour. Such mishaps cannot be avoided, but in common justice we must add that the Assembly Rooms in which the Show was held, and the Committee of Management, were such as need not improvement. They were, indeed, unexceptionable; but, as was facetiously observed regarding the cash account, the misfortune is, "the managers are penned in, and the visitors penned out."

In *Game* Messrs. Boyes, Julian, and Matthews were almost the only successful exhibitors, with birds of high merit and condition. *Spanish* were excellent, but the frequency of the cocks' faces being absolutely eaten away by their female companions was commonly remarked by those who saw them. Most of the *Dorplings* were good, but bumble-footed ones were very prevalent. *Cochins*, particularly the Buff ones,

were first-rate. All the *Hamburghs* were well shown, as were also the *Polands* and the "Extra" class. Among the *Game Bantams* were some first-rate specimens, also of *Black Bantams*.

In *Ducks*, especially *Aylesbury*, the competition was very good. The *Pigeon* classes were excellent; the *Carriers*, *Barbs*, *Pantails*, and *Pouters* especially so. An *Almond* cock from Mr. Harry Adams, of Beverley, took the prize for the best *Pigeon* shown. Nothing but the stress of weather prevented this being the best and also the most remunerative Show ever held at Beverley.

GAME (Black-breasted or other Red).—1, H. M. Julian, Hull. 2, W. Boyes, Beverley. *hc*, G. Sutton, York. *c*, S. Matthew, Stowmarket.

ANY OTHER VARIETY.—1 and Cup, W. Boyes. 2, S. Matthew. *hc*, H. M. Julian.

GAME—Cock.—1, H. M. Julian. 2, W. Boyes. *hc*, G. R. Smith, Scarborough; S. Matthew.

SPANISH.—1 and Cup, H. Beldon, Goitstock, Bingley. 2, T. C. & E. Newbitt, Epworth. *hc*, J. Smith, Long Lee, Keighley; E. Brown. *c*, W. Harvey, Sheffield.

DORRINGS.—1 and Cup, J. Stott, Headley, Rochdale. 2, H. Lingwood, Needham Market. *hc*, Rev. G. Husler, Stillingfleet, York; J. White, Warburton, Northallerton; J. Martin, Claines, Worcester. *c*, W. Bearpark, Ainderby Steeple.

COCHINS (Cinnamon or Buff).—1 and Cup, W. A. Taylor, Manchester. 2, H. Mapplebeck, Moseley, Birmingham. *hc*, H. Mapplebeck; W. A. Taylor; R. W. Richardson, Meaux Abbey. *c*, T. H. Redman, Whitley; R. White, Shirebrook Holey, Sheffield.

COCHINS (Any other variety).—1, T. Stretch, Ormskirk. 2, G. Shrimpton, Leighton Buzzard. *hc*, J. K. Fowler, Aylesbury; H. Lingwood, Martlesham, Suffolk; R. White.

HAMBURGHS (Gold-spangled).—1, H. Beldon. 2, G. Holmes, Driffield. *hc*, W. Bearpark; H. Beldon; T. Walker, Denton, Manchester. *c*, S. & R. Ashton, Mottram.

HAMBURGHS (Silver-spangled).—1 and Cup, H. Beldon. 2, J. Fielding, Newchurch, Manchester. *hc*, J. Walker, Haya Park, Knaresborough; H. Beldon.

HAMBURGHS (Gold-pencilled).—1, Cup, and 2, H. Beldon. *hc*, W. K. Ticker, Ipawich, *c*, J. Walker.

HAMBURGHS (Silver-pencilled).—1 and 2, H. Beldon.

POLISH.—1, H. Beldon. 2, W. Harvey. *hc*, H. Beldon; Mrs. E. Procter; W. Harvey.

ANY OTHER VARIETY.—1, R. Loft, Woodmansey, 2, H. Beldon. *hc*, H. Wyndham, Waghon. *c*, J. K. Fowler; H. Wyndham; E. Leech, Rochdale; W. Harvey.

GAME BANTAMS.—1, W. Adams, Ipswich. 2, G. Noble, Staincliffe, Batley. *hc*, W. F. Entwistle, Leeds; J. R. Robinson, Sunderland; A. H. Etches, Salop; J. Crosland, Wakefield.

BANTAMS (Any other variety).—1, S. S. Mossop, Long Sutton. 2, H. Beldon. *hc*, J. Walker; S. & R. Ashton, Mottram; T. C. Harrison, Hull; Rev. G. F. Hodgson, North Petherton. *c*, G. Holmes, Driffield; W. Harvey.

GAME BANTAM COCK.—1, Cup, and 2, W. F. Entwistle. *hc*, J. R. Robinson; J. Crosland, jun.; T. M. Derry, Gedney.

DUCKS (Aylesbury).—1, J. K. Fowler. 2, Mrs. M. Seamons, Hartwell, Aylesbury. *hc*, M. Harrison, Warton; J. K. Fowler; Mrs. M. Seamons.

DUCKS (Rouen).—1, E. Leech, Rochdale. 2, J. Mason, Rooker Hill, Boroughbridge.

DUCKS (Any other variety).—1, S. Enns, Whitley. 2, R. W. Richardson, Meaux Abbey (Carolina). *hc*, S. & R. Ashton (Garganey); T. C. Harrison, Hull (Pintail and Bahama). *c*, J. K. Fowler (Buenos Ayrean).

SELLING CLASS (Any variety).—1, T. C. & E. Newbitt. 2, G. Loft. *hc*, H. Beldon. *c*, W. A. Taylor; W. Boyes.

PIGEONS.

CARRIERS.—Cocks.—1, R. Fulton, Deptford. 2, J. Hawley, Bingley. 3, E. Horner, Harewood, Leeds. *hc*, R. Fulton; J. Firth, jun., Dewsbury; J. C. Ord, Pimlico. *hc* and *c*, J. C. Ord. *Hens.—*1, J. Hawley. 2, R. Fulton. 3, H. Headley, Leicester. *hc*, R. Fulton; H. Yardley. *hc*, J. C. Ord; E. Horner.

POUTERS.—Cocks.—1 and 2, R. Fulton. 3, E. Horner. *hc*, W. Harvey. *Hens.—*1 and 2, R. Fulton. 3, E. Horner. *hc*, W. Harvey. *c*, H. Headley.

ALMOND.—Cocks.—1, H. Adams, Beverley. 2 and 3, R. Fulton. *hc*, F. Graham; J. Hawley. *Hens.—*1, R. Fulton. 2, H. Adams. 3, H. Headley.

TUMBLERS (Any other variety).—Cocks.—1 and 2, R. Fulton. 3, H. Adams. *hc*, F. Graham; J. Hawley. *Hens.—*2 and *hc*, R. Fulton. 3, H. Adams.

BARBS.—1, J. Firth, jun. 2, R. Fulton. 3, J. Hawley. *hc*, E. Horner. *hc*, H. Yardley. *c*, H. Headley.

OWLS.—1 and 2, J. Fielding, jun., Rochdale. 3, F. Graham. *c*, H. Headley; J. W. Edge.

PANTAILS.—1, J. Hawley. 2, W. H. Tomlinson, Newark-on-Trent. 3, Pickering & Marshall, Driffield. *hc*, H. Headley; T. C. & E. Newbitt. *hc*, J. T. Lishman, Gillington. *c*, H. Yardley; E. Horner.

JACOBIANS.—1, R. Bellamy, Leven. 2, E. Horner. 3, T. C. & E. Newbitt, *hc*, R. Fulton; J. Hawley.

TRUMPETERS.—1, J. Hawley. 2, E. Horner. 3, C. Lythe, Cottingham. *hc*, Pickering & Marshall. *hc*, E. Horner. *c*, J. Firth, jun.

TURBITS.—1, Pickering & Marshall. 2, R. Fulton. 3, E. Horner. *hc*, E. Horner; T. C. & E. Newbitt. *c*, R. Fulton; F. Graham.

ANY OTHER VARIETY.—1, G. H. Withington, jun., Manchester. 2 and extra 2, E. Horner. 3, A. A. Vander Meersch, Forest Hill. Extra 3, J. W. Edge. *hc*, J. T. Lishman; A. A. Vander Meersch; H. Headley; J. W. Edge. *hc*, H. Yardley; J. F. Graham; J. Duggleby, Driffield; J. Mason. *c*, G. H. Withington, jun. (Pantail); F. Graham.

SELLING CLASS.—*hc*, J. W. Edge (Dragons). *hc*, G. Cottam, Cottingham (Owls); J. W. Edge (Swallows); J. Mason, Boroughbridge; E. Horner; J. Key, Beverley; J. C. Ord; H. Yardley; R. J. Bell, Hull (Beards and Trumpeters); J. W. Edge (Magpies); T. C. & E. Newbitt.

CANARIES.—Belgian.—1, W. S. Needler, Hull. 2, F. Tritschler, Beverley. *Half-bred (Yellow).—*1, W. Jefferson, Pocklington. 2, Mrs. Weddell, Beverley. *Half-bred (Buff).—*1, G. Brusby, 2, G. Grant. *Any other variety.—*1, Mrs. Overfield, Beverley. 2, Mrs. J. Camper, Beverley. *Marked.—*1, J. S. Petch, Hull. 2, A. Lewis, Hull. *Nest of Young Clear.—*1, F. Tritschler. 2, J. Pearson, Beverley. *Nest of Young Marked.—*1, J. Pearson. 2, J. Sykes. *Mule.—*1, W. Hesp, Bradford. 2, W. Jefferson, Pocklington.

tou. *Redcap*.—1, Miss Armstrong, Beverley. 2, W. Jefferson. *Selling Class*.—1, T. Neall. 2, G. Grant.

Judges.—*Poultry*: E. Hewitt, Esq., Sparkbrook, Birmingham. *Pigeons*: W. W. Boulton, Esq., Beverley. *Canaries*, &c.: Mr. J. Holmes, jun., Beverley.

NOTES ON GOLDFINCH MULES AND MULE-BREEDING.—No. 5.

Now we have arrived at the period more particularly interesting to Mule breeders. I am quite satisfied with the start I have made, for with the first hen which has gone to nest with the Goldfinch, I can, after her week's sitting, "shine" four good eggs in a nest of four. This, on the 8th of May, is commencing the month pretty fairly. On the twelfth day of sitting I shall form a nest myself, as near as possible resembling that made by the hen, and transfer the eggs from one to the other, for the purpose of preventing any of the bloodsuckers secreted in the old nest annoying either mother or young ones when chipped. When the young are about ten days old, I shall supply another clean nest. I have the old nests scalded when they are taken away. Attention in this respect, I consider the most important matter in rearing birds, whether Mules or Canaries.

It is scarcely necessary for me to advise as to general management; suffice it to say that those rules laid down in the "Guide" of Mr. Blakston, published in the last volume of this Journal, respecting Canary management, will be sufficient. In Mr. Blakston's excellent remarks, directions may be found to guide the learner in the breeding season, as to general treatment, and the necessary requirements for breeding Canaries.

During my many years' experience in Mule-breeding, I have noticed that it is generally in the latter part of the season that I have had the most success in breeding the best Mules, birds well broken in feathers. I never think of pairing a cock Goldfinch with a Canary hen in the same way that I would a pair of Canaries, but work with three or four hens, taking the Goldfinch from one hen when she has begun to lay, and putting him to another; or if two hens should be nesting at the same time, changing him often from one to the other. This plan can be best carried out if the cages are so arranged or constructed, that by drawing a slide the Goldfinch can be admitted without handling him, and thus affrighting the hen birds.

During the breeding season my Goldfinches feed upon hemp seed, canary seed, linseed, groats, the coarsest of Scotch oatmeal, dandelion heads, groundsel, plantain heads, shepherd's purse, lettuce, &c., and as soon as I can obtain them, thistle heads; but before supplying the latter, I cut off most of the cotton or down, to prevent it being scattered in all parts of the room, after the Goldfinch has had its beak about it.

At the end of the season, naturally enough, the birds are all the worse for wear, but extra attention should be paid to them in keeping them well through the moult, or autumnal sickness, which ensues. I know many breeders are in the habit of neglecting their breeding stock after they have been doing good service for them, devoting almost the whole of their attention to the young stock. The old birds are thus taken suddenly off stimulating and feeding diet, to bare seed and water, and what with this change, the moulting, and chilly weather, death often ensues to an old favourite, much to the surprise, and, no doubt, sorrow of its owner, who regrets the death of a "rare bred'un," but not thinking that a want of proper attention has been the cause of it. The mortality with Goldfinches is greater in proportion than with Canaries, which is, no doubt, owing to their not being able to stand the cage confinement like the Canary, and not having sufficient attention paid them in their diet.

I know no breeding-cage bird of which the death can be caused so easily as the Goldfinch. A change of ownership, although a bird may be supplied with every requisite kind of food, will often make them turn dull and die off. In proper health and condition they are plucky birds, and when kept with others in a cage evince much pugnacity. If by chance the supply of food is not equal to the demand, watch the Goldfinch when the seed-drawer or glass is replenished; no other bird dare approach his sharp beak, but all allow him to remain master of the position until his appetite is appeased.

I have seen it stated that in Canary-breeding the cock bird should be two years old and the hen a little older—I suppose this means three years—before commencing breeding, but for what reason I cannot comprehend. It is well known that a Canary cock is in full vigour for breeding before it arrives at the age of twelve months, and were I to choose a hen for nest-

ing, I should prefer a fresh young hen—one bred the previous season. I have generally found young hens good layers, and more vigorous and healthy than three-year-old birds. Well, then, if possessed of a Mule-breeding hen do not wait until it arrives at the age of two or three years, but begin at once, or it will be so much time lost, and perchance the bird may die before it reaches a greater age.

Respecting Mules, the famous specimens of both Goldfinch and Linnet, and the dark Mules also, now-a-days—those in particular shown at the late Sunderland and Crystal Palace Exhibitions—were alone worth witnessing, but to my sorrow, in several instances, some of the best in an unwashed, smoky state, had to retire from foremost positions for others smarter in feather and appearance, and in accordance with the printed instructions in the schedule, that "Prizes will be awarded for beauty of plumage, quality, and high condition." It is not a pleasant duty for a judge to put back specimens which beneath their dirt have something good. But, still, this point must be carried out, otherwise a judge would be encouraging that which is offensive to the sight of so many visitors, who go to admire "beauty of plumage" and "high condition" in birds, not dirty birds.

During my visit to the Crystal Palace Show, on the opening day, having been engaged the day previous with the arduous task of judging, I may state that I was one of the privileged five who passed through the "open sesame" door—the particular door named by "W. A. B." in a previous Journal, for the purpose of enjoying a cheroot. The party being in "full feather," the conversation naturally enough turned on the subject of birds, of which muling hens formed the principal topic. Various opinions were put forth, one in particular from a young Mule fancier, although a spirited exhibitor, to the effect that it is immaterial about a particular strain of hen being requisite to throw good pied Mules. I may here state for the knowledge of many, borne out by several of the best Mule breeders in England, that it is necessary for successfully breeding pied Mules, to be particular in obtaining hens, not any kind of Canary hen, to breed good Mules. Of this I am fully convinced, although a casual or haphazard hen may perchance breed a nice-marked Mule. Such a hen I should, of course, put by for muling alone with, and breed young stock for future seasons.—GEO. J. BARNESBY, *Derby*.

DELAY IN BREEDING.

I HAVE made three artificial swarms from a strong black colony, and even now it seems the strongest I have. In two of these the queens were at liberty on May 5th. I have never been able to ascertain that the queen of either had been out for her wedding trip, and I examined one only yesterday (the 20th day), and find no signs of eggs or brood. The queen is there, and seems all right, but no breeding is going on. The other swarm was in the same condition a day or two previously, and so I seem to be in a fair way to have two drone-breeders only. I tried a few days ago to set the queen of one of them off, and took out the comb with her on, and with a feather caused her to take wing three times, but all to no purpose, and she was back directly.—J. R. J.

[Unfavourable weather is the probable cause of the delay in the fertilisation of your young queens. They need not, however, necessarily turn out drone-breeders, since Mr. Woodbury, in No. 83 of our new series, recites an instance which occurred in 1862, in which a queen hatched on the 17th of August in that year, did not commence egg-laying until the 19th of September, so that she could not have been fecundated until the thirtieth or thirty-first day of her existence, notwithstanding she laid worker eggs as usual, and turned out a good queen. We think Mr. Lowe also once related a case in which the period was extended to forty days with no injurious result.]

NEW MODE OF INTRODUCING QUEENS.

DURING the second day of the meeting of German bee-keepers held at Darmstadt in September last, the President read a letter from Mr. Uhle, in which he described the following process for effecting the safe and speedy introduction of queen bees:—

Remove the queen of a colony, and feed the bees with simple syrup scented with freshly-grated nutmeg. When the bees have freely partaken of this, dip the queen intended to be

introduced into the scented solution, and immediately set her at liberty among the bees on a broodcomb.

This should be done in the evening, just before dusk, because the bees are then naturally more disposed to accept an offered stranger than earlier in the day; and because the odour of the scented syrup might attract robbers if fed either in the morning or at midday.

The queen is to be dipped into the scented syrup primarily to impart the same smell as the bees have already acquired from it; but likewise in order to tame and subdue her, so that she may not run wildly about and try to escape when introduced among the bees, but be as it were constrained to accept the caresses and homage of her new subjects.

When introducing a queen she should not be seized or held by her wings, but be grasped softly by the thorax with the thumb and forefinger. A queen held by the wings is apt to struggle and rush wildly among and over the bees when released, and thus deporting herself as a stranger, she incurs the risk of being regarded and treated as one by the bees, and may be either mutilated or killed.

If the bees are in hives opening at the top, the scented syrup may be poured directly into the cells on one side of every partially-empty comb, and their feeding and scenting may thus be promptly effected, even while the operator is searching for the queen intended to be removed.

This process admits, of course, of variations and modifications, such as will readily suggest themselves to intelligent bee-keepers.

LIGURIAN BEES.

Would you ask Mr. Woodbury to give your readers a little information on Ligurian bees, their cultivation, and the mode of joining queens to black stocks? Many of us are, I do not doubt, at this time anxiously looking out for the arrival of their majesties, the writer for one, and a few instructions how to proceed would be very welcome; also a few hints on removing the black queens and getting ready for the strangers, &c. I have been referred to the numbers of "our Journal" for the 11th of April and 2nd of May, 1867; but unfortunately I have not them by me, nor can I now obtain them, as I find they are out of print. I hope, therefore, I am not asking too much in begging that the articles on Ligurians which they contain, or at any rate the substance of them, may be repeated in an early number.

I had one very fine swarm on the 24th ult. I fumigated them, and with the help of two friends, bee-keepers, had a look for the queen, but could not find her. This is my first disappointment this season, for I do not know how to manage when I get the Ligurians. It was like looking for a pin in a bottle of hay. I found the queen in one hive that I fumigated some time ago, but there were twenty times the number this time to look over, and I had to give it up in despair. I set a frame hive made nearly to your directions, and the bees all went up, and at half-past 11 p.m. I screwed on the bottom board, and placed them in the house. They are all right, but the weather is like winter here just now, and none of my bees are lively. I have fed the swarm every night. My idea was to fumigate a swarm, find the queen (I failed, I am sorry to say), and place her in a wire cage in the hive, so that when the new queen came there would be no trouble in getting at the old one. I think the advantages would be greater than having to find her just when she was wanted. She would lay no eggs, and the Ligurian would have a fair start, and the bees no chance of raising a queen for themselves. The bees, being used to the old queen in the cage, would more readily take to the new one, and it would not disturb the new combs.

How would it do to operate on the second swarm, which would be smaller than the first, and when the bees were reconciled to the new queen to put the hive in the place of the first swarm? Or should I put the new queen in her cage in the hive with her own bees, and put them in the place of a strong stock in the middle of a fine day, when they were in "strong flight," and then join the first convenient lot of bees to her in a week or two? Or should I let the bees in my swarm of the 24th fill the frames and take them for the hive for the new queen, and let them (the swarm) fill some more?—T. D. H.

[You were all wrong in fumigating or meddling with your swarm; and it is very fortunate that you could not discover the queen, as the bees would have built none but drone combs whilst she was kept in confinement. Mr. Woodbury will give the required information in an early number.]

OUR LETTER BOX.

DORKING CHICKENS DYING OF SCOUR AND CRAMP (J. N. C.).—Your chickens are still eating something that is injurious to them, or lack something necessary, since they die; but we do not think the gall has anything to do with it. Any one conversant with the inside of a fowl will tell you that all parts that are in contact with the gall bag acquire a deep bottle-green colour, while the adjacent parts are more slightly tinged. If, however, as sometimes happens, there is either small rupture or slight excitation, then the whole of the intestines are coloured. Even then death does not of necessity follow; a fowl will live many weeks. You may test our idea of the bile by trying some on paper or linen—you will find it dry green. Put all your chickens under a course of camphor, let all their water be strongly impregnated with it, and give a pill of it every night the size of a small pea to each chicken. If adults suffer, give them two.

FOWLS UNHEALTHY—POULTRY-HOUSE FLOORS (A Subscriber).—You will never have healthy fowls if their houses have bricked floors. They cannot cold, cramp, and paralysis; but if you wished to make them worse cover the bricks with sawdust. Fowls pick about in the morning on the floors of their houses. As the gizzard of a fowl is in reality a mill acting with a motion like that of opening and shutting a hand, it is necessary the mill should be provided with stones. When they pick their food from the earth they get them, but when they pick among sawdust they do not. They are pretty much in the condition a miller would be if his nether millstone were made of indianrubber—with this difference, that the indianrubber would not increase in bulk, while the sawdust swells, and neither grinds itself nor allows anything else to do it. Have the bricks removed; or, if that may not be done, cover them 6 or 7 inches deep with loose earth, road grit, or gravel. Remove all sawdust. Every fowl should be purged with a table-spoonful of castor oil to get rid of the sawdust, and it would be well afterwards to give Bailey's pills for a few nights. Give them ground oats for a time, and then barleymeal. Do not confine yourself to whole corn.

YOUNG PIGEONS DYING IN THE NEST (E. Bonedonne).—You do not feed on sufficiently good food; barley does for common Pigeons and others when not breeding; soaked bread is unsuitable. Feed on peas and Indian corn. Perhaps some of your young birds died on account of the cold weather, their parents being too long off the nest; also, if Pigeons are bad feeders, they are apt to give their young merely water, or much water and not sufficient solid food, or only good food to one, and then the other dies. Almost all young Pigeons are easily enough reared by hand after they are a fortnight old, by giving them soaked peas or beans morning and night. No young birds are so easily reared.

NIGHTINGALES (A Constant Reader).—These birds favour the south-east and south-west portions of England, although instances are recorded of them having been heard north of the Trent. Occasionally they visit Derbyshire. Yarrell asserts upon authority that the Nightingale has been heard five miles north of the city of York, and on the north-west side of England, Carlisle. It has even been stated that in the early part of the summer of 1826—a remarkably warm season, "that the Nightingales had arrived in Calder Wood, Mid. Lofthian." A friend of mine (Mr. Atkinson, Worcester), a lover of the Nightingale and Woodcock, and Kingfisher also, has kept many of the two former (one letter to me stating he had then nine Nightingales), caught in Worcestershire after being reared by the old ones, and they have generally proved sufficiently learned in their song without being tutored further. I would not advise the rearing in the nest young Nightingales. They require much more attention than other birds. Many writers state they require such and such food, very difficult to procure. I know for a fact that Nightingales have been well kept on scraped beef mixed with the yolk of egg hard boiled, with a very little water to it. This food is soon prepared, but it must be made fresh every morning, or it will soon sour. Be very particular also that the pot (earthen the best), in which the food is placed be clean. It should be washed out every day. There are other kinds of food which may be given to Nightingales, if conveniently obtained—viz., ants' eggs, meal worms, or locks' liver or heart. I have known them do well on German paste (a good receipt for which I have), mixed with hard boiled and a little scraped beef now and then. Wasp grubs may also be given. When a cake has been secured, before the grubs are too far changed, I would "lithem" in an oven by slightly baking them head downwards. Then keep the cake of grubs on a sieve in an airy situation, to prevent them swamping, or they will be useless for the Nightingale's appetites. I would advise keeping the birds from live food as much as possible, for this reason—that it might not be convenient to have a supply of it; and however natural it may be, still it has the effect of drawing them off the prepared food, of which they will sometimes starve rather than partake.—G. J. E., Derby.

WHITE-LEGGED GOLDFINCHES (A. Potter).—"Goldfinches' legs become changed from dark to light through the birds being moulted in the house. It is quite true, no doubt, that you have bred from a dark-legged Goldfinch. It is not the first instance I have heard of by scores, but it is no proof whatever that the bird is a one-year-old specimen. Some fanciers imagine, because they have bred from a dark-legged bird caught the previous autumn, that it must be but a yearling. Not one in twenty young Goldfinches will be up to the breeding mark the first season. As their legs remain black in their wild and natural state, and as some imagine they are all young birds with black or dark legs, pray what becomes of the two or three-year-old birds?—G. J. BARNESBY, Derby."

BIRD ORGAN (E. Y.).—A bird organ can be purchased at most of the German houses where clocks and musical instruments are sold. There is one in Holborn. The price of one is from 15s. and upwards. We have no confidence in them for teaching young birds to sing a tune, although we believe the Bullfinch is taught to pipe a tune by the constant use of one of the organs.

POULTRY MARKET.—JUNE 2.

We have complaints young things do not grow, and that cold nights are doing mischief among them. The numbers, however, increase, and prices fall a little. There is no trade.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	0	4	6	Partridges.....	5	0	0	0
Smaller do.....	3	6	4	0	Grouse.....	0	0	0	0
Chickens.....	2	0	2	6	Pigeons.....	0	9	0	10
Geese.....	6	0	7	0	Rabbits.....	1	6	1	6
Ducklings.....	2	0	2	6	Wild do.....	0	8	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 11—16, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.		
10	Th	Meeting of Royal and Zoological Societies.	69.4	47.1	58.2	19	40	af 3	12	af 8	●	0 52	161	
11	F		72.0	47.7	59.8	13	45	3	13	8	7 5	24 9	1 0 41	162
12	S		71.1	46.1	58.6	21	45	3	14	8	5 6	14 10	2 0 28	163
13	SUN	3 SUNDAY AFTER TRINITY.	71.6	47.6	59.6	20	45	3	15	8	11 7	57 10	3 0 15	164
14	M	Meeting of Royal Geographical Society.	72.3	47.9	60.1	19	45	3	16	8	24 8	33 11	4 0 3	165
15	Tu	Royal Horticultural Society, Fruit, Floral,	72.6	48.2	60.4	19	44	3	16	8	42 9	morn.	5 before	166
16	W	[and General Meeting.	72.4	48.3	60.3	18	41	3	16	8	59 10	4 0	6 0 23	167

From observations taken near London during the last forty-two years, the average day temperature of the week is 71.6°; and its night temperature 47.5°. The greatest heat was 90°, on the 13th, 1842; and the lowest cold 30°, on the 11th, 1806, and 15th, 1850. The greatest fall of rain was 0.95 inch.

PLANTS FOR ROOM VASES OR TABLE DECORATION.



AT places where such plants are called for regularly, it would be advisable to change them daily and keep a stock, in order that there may be variety, and to ensure difference in appearance, as well as for the benefit of the plants themselves. Many valuable and promising young plants have been utterly ruined through allowing them to remain in vases in dwelling-rooms for some days, exposed perhaps to all the draughts of open doors and windows in winter, or where they have not sufficient light and moisture in summer. Great care should also be taken to select plants entirely suitable for the purpose, as some with tender foliage or weak blooms are apt to return to the gardener's care bruised or broken. Some are also easily disfigured by the sudden change of being transferred from an average temperature of 75° or 80° to a room perhaps as low as 40° or 50°.

The following is a selection of plants really worth possessing, as they will be found more or less beautiful objects, as well as hardy when compared with other stove or tender plants.

Of flowering plants, some Orchids are superior to all for decoration if in medium-sized pots. The beautiful and fragrant *Aërides*, *Cattleyas*, with their varieties, suitable for cool temperatures, and the numerous tribe of *Dendrobium*, are all excellent for this purpose, being very effective in vases, where they may be singly seen, and without their foliage or bloom in any way being injured.

Flowering *Gloxinias* and other plants of the *Gesneraceæ*, such as *G. Donckelaarii*, *cinnabarina*, or the new *G. exoniensis* are very desirable, although they will not bear a change of temperature with impunity.

The *Anthurium Scherzerianum* stands almost unrivalled, remaining so long in bloom and blooming so profusely.

Dwarf and well-grown plants of the two varieties of *Poinsettia* are also very admirable, as the singularity and richness of the scarlet bracts contrast so well with the bright green leaves. The best plan to obtain good young plants is to strike cuttings in March, allow them to become a little potbound before winter, keeping them about 3 or 4 inches from the glass, and, when showing their scarlet bracts, to give a liberal supply of manure water. By pursuing this method, these floral leaves may be grown 10 or 12 inches long—i.e., 20 or 24 inches across what is usually designated the bloom.

Euphorbia jacquiniæflora is very free-blooming, handsome for a vase, and well worthy of cultivation.

Of handsome-foliaged plants, nothing can supersede a well-coloured *Draena* or *Croton*, as the change of temperature, if not too low, appears to have no effect upon either. These being easy plants to propagate and manage, are particularly deserving of notice, as keeping them clean by syringing and exposing them fully to light to colour well, are the only attentions which are essential for them. *Marantas* and *Alocasias*, on the contrary, are easily injured, and will

not bear moving much, requiring always bottom heat and a high temperature, as well as a damp atmosphere.

Plants of *Caladiums*, when small, will answer well, but as they need plenty of moisture at the roots when growing, do not allow them to suffer from want of it.

There are some Palms, Ferns, *Pandanuses*, &c., which are very singular and attractive, their hardiness recommending them more especially. The following I consider the best for table or vase use—viz., *Areca sapida*, *Cycas revoluta*, *Geonoma Scottiana*, *Corypha australis*, *Phoenix dactylifera* and *Chamarops humilis*, *Pandanus elegantissimus*, *P. graminifolius*, *P. utilis*, and *P. javanicus variegatus*. These when small are highly suitable. There are others, not enumerated here, very beautiful, but the preceding will continue a supply regularly, and without much trouble when in their home quarters; and even if not required for removal into the room, are excellent features to gaze at in the group.—EDWIN NEWMAN, *Edge Hill, Liverpool*.

CYCAS REVOLUTA FLOWERING—CLIMATIC REVOLUTIONS.

A FINE plant of this elegant Cycad is at present just coming into flower in the gardens at Bargany, the seat of the Duchesse de Coigny, in Ayrshire, where it has occupied a corner of the stove for, it is said, upwards of forty years. It has a stem of about 2 feet in height, and its dark green frond-like leaves measure about 5 feet. Originally it was grown in a large tub, and would appear for a long time to have been in a not very prosperous condition, but latterly, owing to the better treatment it has received at the hands of Mr. Smith, and to its roots being allowed the run of a raised border in which a few tropical plants, Bananas, Guavas, &c., are planted, it has thriven admirably, putting forth annually a whorl of new leaves.

As a curious illustration of the climatic changes which have occurred in this country, I may mention that a former gardener at Bargany, being fond of dabbling a little in the deep things of geology, had procured a small collection of fossil plants from the neighbouring coal mines, some of which are still lying about the gardens, and I have been informed by one who can read these old-world epitaphs, that of these some are the remains, if not of this, at least of some closely-allied species of Cycad, and that the Cycad family have contributed largely towards the formation of many of our coal fields; so we must infer that only a few trifling thousands of ages ago our glens and valleys were tropical forests crowded with the very plants we are now coddling in stoves and coaxing to grow by artificial heat obtained by burning the fossilised bodies of their ancestors. May we not also infer that with 10° of frost in the last week of May, we are still drifting north-pole-wards?—AYRSHIRE GARDENER.

COOL-HOUSE ORCHIDS.—No. 4.

THE compost most suitable for Orchids is one having for its basis one part of fibrous brown peat, preference being given to that full of particles of white sand, and which

when placed in water does not become a soapy mass, but will bear to be squeezed in the hand, and when liberated will return to its original form. Such will retain moisture, and the roots will cling to the peat, and pass through it freely. If it give off inky or black water on being immersed and then squeezed, it is wholly unsuitable. The other ingredients should be one part of cocoa-nut fibre refuse (that which from age has become very brown or black, and is so reduced as to resemble peat, and is lumpy), and one part of sphagnum chopped up. These materials form the staple of the compost, the peat being torn up with the hands, and any pieces of the roots or stems of Heath removed. If cocoa-nut refuse cannot be had, one-half part more of sphagnum may be substituted, chopping it up rather small, but the refuse is better. Add half a part of silver sand, half a part of crocks broken rather small, and one part of charcoal in pieces from the size of a pea or hazel nut to that of a walnut. The whole of the materials should be well mixed. This compost will grow almost all Orchids, but a few require a closer soil, and of such particular note will be made when treating of the kinds suitable for cool temperatures.

In cool houses Orchids do not succeed on blocks of wood, or but few; there are some, however, that may be so grown, and for the blocks nothing answers so well as cork, though any kind of hard wood, as oak or ash, answers very well. Resinous woods should be rejected. Orchids also succeed admirably on portions of the stems of tree Ferns. The blocks should be covered with a thin layer of fresh sphagnum free from insects, then with a little fibrous peat, packing the roots on that, covering them with moss, and securing firmly with copper wire.

Baskets are sometimes used, and are indispensable for Stanhopeas. Preference is mostly given to those made of wood, as they can be broken to pieces, or will have decayed by the time the plants require re-basking; but those known as rustic cement baskets are good—the plants grow in them as well as, if not better than, in those of wood; they do not harbour insects, and have a much better appearance. The baskets should be lined with sphagnum or moss, and the above compost employed for filling, then surface with moss.

As respects pots, Orchids require large pots for the size of the plants. Some cultivators prefer pots having holes in the sides, and others consider those formed of galvanised wire, or baskets made in the form of clay pots, and called erinoline pots, are better. Clay pots or even pans made in the ordinary way answer very well, and are everything needful, except for very large specimens; then tubs may be substituted, and they, as Mr. Temple informs us, page 219, answer every purpose of a pot or basket, "being cheaper, lighter, and more easily removed than pots, and less liable to breakage."

Whether grown in pots, pans, or tubs, these need not exceed 1 foot in depth, and of that depth half should be devoted to drainage, not forgetting that there must be holes in the bottoms of the pots or tubs to allow of the water passing away freely. The drainage should consist of crocks or broken pots, putting the rougher at the bottom, and the finer uppermost, covering it with a thin layer of sphagnum or cocoa-nut fibre, the waste from the rope and mat manufactories. The pot is then to be filled with the compost, so that when the plant is introduced, and the roots placed on the compost, and covered with moss or sphagnum, there will be a cone 3 or 4 inches above the rim for small plants, and 6 inches or more for large plants. The compost should be compressed rather firmly.

In repotting, as much of the old compost as possible should be removed, and that without injury to the roots, the pots being cleaned inside as well as outside previous to potting.

Of the following species and varieties, those marked with an asterisk (*) are most suitable for a cool temperature, and may be kept in winter in one of from 40° to 45°; those not so distinguished are only suitable, as far as I have experience, for a winter temperature of from 45° to 50°.

ACNETA HUMBOLDTII.—The flowers are produced on pendent branched racemes, and are large, purplish brown or chocolate, striped and spotted. It requires to be grown in a basket, the flowers growing through the bottom. It flowers in May, or early in summer. Venezuela and New Granada.

AREIDES AFFINE.—Racemes pendent and branched; flowers whitish, shaded with rose colour, and spotted with rosy purple. It flowers in summer. Sylhet.

A. AFFINE ROSEUM.—The flowers are larger than those of the preceding, and more brightly shaded with rose, otherwise it is very similar.

A. CRISPUM.—Racemes of delicate white flowers, rose lips, flowering in May, or early in summer. East Indies.

A. CRISPUM WARNERI.—A fine variety of *Areides crispum*, with larger and better-coloured flowers.

A. ODORATUM.—Racemes of white fragrant flowers, produced in summer, about August. East Indies.

A. ROSEUM.—Racemes short and dense; flowers rose-coloured, produced from June to August. East Indies.

The *Areides*, although natives of the East Indies, mostly grow in the mountain regions at considerable elevations, and consequently succeed in a comparatively cool temperature, but they should have the warmest, least airy, and most humid situation.

***ACROPERA LODDIGESII** (Gongora galeata).—Pendent racemes of dull yellow flowers, very sweet. It flowers in July or August, and may be grown in baskets or in pots. Mexico. There is a variety with yellow or pale orange flowers, distinguished by being spotted. It is named *Acropera Loddigesii luteola*. They are not particularly desirable in collections limited in number.

***ANGULOA CLOWESII.**—Flowers on erect stalks, large, yellow and white, not unlike those of a Tulip. May and June. Columbia and New Granada.

***A. UNIFLORA.**—Flowers cream-coloured, and as the name implies solitary. May and June. Peru.

***A. UNIFLORA SUPERBA.**—Flowers pink, but it is sometimes confounded with *A. superba*, with crimson and purple flowers, which is from Mexico. May and June.

The *Anguloas* require to be kept cool and dry in winter, and when flowering need to have a good heat and dry atmosphere, or the flowers spot.

ANGULOA RUCKERTI, with yellow and crimson flowers, would probably succeed in a cool house. It does exceedingly well in a warm vinery. May.

***BARKERIA ELEGANS.**—Racemes of light rose-coloured flowers, produced in July. Mexico.

***B. LINDLEYANA.**—Purple and white flowers in October or November. Costa Rica.

***B. SKINNERI.**—Racemes erect; flowers rose-coloured, in summer. Guatemala.

***B. SPECTABILIS.**—Racemes of lilac flowers, large, sometimes 3 inches across. It flowers in summer (July). Mexico and Guatemala.

The *Barkerias* may be grown in shallow baskets, or in pots, well elevating the compost above the rims of the pots.

BIPRENARIA VITELLINA.—Deep yellow flowers, with a chocolate blotch on the lip. The flowers are small, but produced in clusters. June to August. Rio Janeiro and Venezuela. It may be grown in pots, well raising the compost above their rims, or in baskets.

BLETIA VERECUNDA.—Clusters of purple flowers on longish stalks. March and April. West Indies. It requires no sphagnum in the compost, but succeeds in equal parts of peat, cocoa-nut fibre refuse, and old dry cow dung, top-dressing with the last named, and adding a few pieces of charcoal and crocks to keep the soil open. Good drainage should be given, as abundant waterings are required.

***BRASSIA VERRUcosa.**—Pale green, brownish flowers, and sometimes whitish flowers, on spikes. It flowers in March. Guatemala. Like the preceding *Bletia*, it should have a more substantial compost than that used for most Orchids, and may have turfy loam in lumps added with advantage to the compost recommended for the *Bletia*. Water very freely when growing, securing good drainage, and keeping the plant dry when at rest.

BRASSAVOLA GLAUCA.—Flowers yellow, in March. Vera Cruz. Grows best on blocks of wood, but may be grown in pots.

BROUGHTONIA SANGINEA.—Deep crimson flowers in clusters. August. Jamaica. Succeeds on blocks of wood without moss, or in pots, if well raised above the rim.

CALANTHE VERATRIFOLIA.—Spikes of white flowers in April. Java and New South Wales.

C. VESTITA.—Spikes of white flowers with yellow or crimson centre. It flowers in winter, from November to February. Java and Burmah.

C. VESTITA LUTEA.—Flowers yellow, with rose-coloured centres. It also flowers in winter.

For the above *Calanthes*, to the compost named at the commencement of this paper, add one part of old cow dung, and one part of fibrous loam (in lumps), top-dressing with old cow dung. Water freely when growing, keeping *C. vestita* and *C. vestita lutea* dry in winter, but *C. veratrifolia* dry at no time. Afford them abundance of air, and keep them near the light, of which they cannot have too much in winter.

CATTLEYA AGLANDI.—Blotched sepals and petals, rosy purple lip. July. Brazil.

C. AREMBERGII.—Large lilac flowers. July. Brazil.

C. CRISPA.—White waxy flowers, crisped purple-tipped labellum. September. Brazil.

C. CITRINA.—Yellow or citron-coloured flowers, pendent and showy. April. Mexico.

C. ELEGANS.—Cinnamon purple flowers, with white and deep crimson-purple lip. Brazil.

C. HARRISONI.—Rosy lilac flowers, with yellow and white lip, in clusters of from three to five. April. Brazil.

C. INTERMEDIA.—Blush white, with crimson or purple lip; flowers large; plant tall, from 12 to 16 inches high. April. Brazil.

C. MOSSIE.—Lilac or rosy flowers, crimson purple lip, very variable. July. Venezuela.

C. SKINNERI.—Bright rosy purple flowers. August. Costa Rica.

The Cattleyas may be grown in pots, raising the compost well above the rim, and keeping the plants elevated.

CELIA BAUERIANA.—White, scented flowers in spikes. June. Jamaica. It succeeds in a shallow basket, the compost being raised considerably if it be grown in a pot.

**CELOGYNE CRISTATA*.—Racemes of large white flowers, pendent, with orange-streaked lip. Nepal and Khasiya.

**C. MACULATA*.—Flowers white, lip spotted with crimson. Autumn—October and November. Khasiya.

**C. LAENARIA*.—Purple, with white, blotched with rose and crimson. Blooms in winter. Khasiya.

**C. PRECOX*.—Rosy purple, marked with white on the lip. October. Nepal.

The last three should have a compost of equal parts of peat and fibrous loam, and one part old cow dung or leaf mould, and silver or river sand, draining well, but not so much as for the majority of *Orebidæ*; placing four or more bulbs in a 6 or 7-inch pot. They should be potted as soon as the bloom is over, as the young leaves push immediately from the same sheath. Place the plants in a position near the glass, watering moderately at first, and until the leaves have grown considerably, then water abundantly. When the pseudo bulbs are fully formed cease watering, allowing the foliage to turn yellow and die. Keep them near the glass, and dry and cool. Attention should be paid the bulbs occasionally to see that they remain plump; if so do not give water, but if they shrivel supply a little to cause them to swell again, being careful not to have the soil long wet, or they may be started prematurely into growth. In potting, the bulbs should be placed just on the surface of the soil. *Cattleya Aclandiae* succeeds in the usual compost of chopped sphagnum, fibrous peat, charcoal, and potsherds. Be careful that water do not lodge in the heart of the young leaves; admit air freely, finish off the growth early in autumn, and in winter keep dry and cool.

COMPARETTIA FALCATA.—Flowers rose-coloured, on spikes. May. Mexico. Grow in pots, raising the plant high in the centre of the pot. It succeeds in baskets.

**CYMBIDIUM ALOEPOLIUM*.—Pendent racemes of purplish flowers, with black markings. September to March. East Indies. It may be grown in a pot, in fibrous loam and peat, with a few pieces of charcoal and crocks, providing good drainage. It also succeeds in a basket, and bears the heat of a stove and the cool dry air of a greenhouse equally well.

C. EUBURNÆ.—Flowers white, orange-streaked lip, borne on erect spikes. May. East Indies.

C. MASTERSI.—Flowers white, occasionally blotched with pink. August. East Indies.

**C. SINENSE*.—Purplish brown. China.

The *Cymbidiums* succeed in pots, the plant being raised high in the centre of the pot.—G. ABBEY.

CLASSIFYING COLOURED-FOLIAGED PELARGONIUMS.

I TRUST that you will excuse me for saying that I fear your answer to your correspondent "B." at page 362, may prove somewhat of a stumbling-block to judges at some of the ensuing horticultural exhibitions. You say, "We consider *Pelargonium* Model, *Perilla*, *Beauty of Oulton*, &c., or any others belonging to this section, variegated, and eligible for exhibiting as variegated varieties in company with any of the Mrs. Pollock section." Some few weeks previous to the Royal Horticultural Society holding their first show in connection with that of the Royal Agricultural Society at Bury St. Edmunds in July, 1867, the question as to whether this section of *Pelargoniums* should or should not be considered as variegated plants, and exhibited as such, was discussed in the columns of the *Gardeners' Chronicle*, and I think also in *THE JOURNAL OF HORTICULTURE*; and this question was at last set at rest by the Floral Committee of the Royal Horticultural Society deciding, and their decision was also confirmed by the Council of that Society, that this section of *Pelargoniums* could not be considered as variegated plants, nor be allowed to be exhibited as such at any of their exhibitions. Agreeably to this decision, many horticultural societies have very properly assigned a separate class for this tribe of highly ornamental plants. I do not at present wish to raise the question of what constitutes variegation in the leaves of plants; but surely if the *Bronze Zonals* are considered as

variegated on account of having two shades of colour upon the surface of their leaves, the *Green Zonals* are also, from the same circumstance, entitled to similar distinction.

At present there is, I think, something like uncertainty as to the most fitting terms to apply to the various sections of *Pelargoniums*. We have the term "*Tricolor*" and "*Variegated Zonal*" indiscriminately applied to the same class of plants. Undoubtedly, the latter appellation is the more correct of the two; but the former term having a prior claim, as it were, upon the public mind, it might be unwise to try to alter it. But with regard to the *Bronze* section, I think it is somewhat different, and they are alluded to as "*Bronze Zonals*," "*Gold and Bronze Zonals*," and "*Bicolors*." In my opinion the first-mentioned term is the most appropriate, the second is unnecessarily long, and the third—viz., *Bicolor*, ought to be applied to zoneless variegated varieties, such as *Flower of the Day* and *Golden Chain*. We should then have:—

VARI- GATED.	(Golden <i>Tricolor</i>	Mrs. Pollock section.
	Silver <i>Tricolor</i>	Italia Unita ditto.
	Golden <i>Bicolor</i>	Golden Chain ditto.
	Silver <i>Bicolor</i>	Flower of the Day ditto.
	<i>Green Zonals</i>	All Green-leaved sorts with zones.
	<i>Bronze Zonals</i>	Beauty of Oulton section.
	Plain Green, or Zoneless.....	Tom Thumb, &c.
	Plain Yellow, Zoneless.....	Golden Nugget, &c.

Some societies have adopted the system of offering prizes for collections of "*Ornamental-foliaged Pelargoniums*," and this is, no doubt, intended to include the *Bronze Zonals*; but the term is not sufficiently definite, as it would hardly be consistent with justice to refuse to apply this term also to the foliage of many of the *Green Zonal* varieties.—P. GRIEVE.

METROPOLITAN PLANT DECORATION.

IN St. Margaret's Square, Westminster, opposite the Houses of Parliament, the space formerly enclosed, and in which Canning's statue stood, is now laid down in grass and flower beds. The latter are filled with *Pelargoniums* and other plants on the "bedding system," and will in the course of a week or two be in a blaze of colour. We hope this style of metropolitan decoration will be extended, and every available space made to contribute to the pleasure and enjoyment of those who have no other means of benefiting by the soothing and elevating influences that the contemplation of flowers tends to induce. It would be a great additional advantage if a large label were placed in each bed with the names of the plants of which it is composed. For instance: "*Rebecca*, edged with *Lady Plymouth*," "*Waltham Seedling*, edged with *Cerastium tomentosum*," or whatever the arrangement may be. The thing would then be instructive as well as ornamental, and may have an educational tendency, prompting many to the study of these subjects who otherwise may have given little heed to them.

An attempt has been made to enliven Trafalgar Square, by the introduction of standard *Days* in tubs. There were some half dozen ranged against the Pall Mall wall last year which made such a miserable appearance, they looked as if they were shrinking from public gaze. This year a few more have been added to the number, which appear to have given confidence to the former inhabitants, and induced them to venture out among the fountains. Though the numbers make these plants a little more conspicuous than they were last year, they have, nevertheless, a very insignificant effect. Why not stand some of them upon the Pall Mall terrace, on a level with the National Gallery? Set one opposite each of the triplet piers in that balustrade, and they would not only show themselves, but help to relieve the mass of masonry formed by the National Gallery and the terrace together. They are lost where they are, and look as if they were shrinking into their tubs terrified lest the Nelson Column should fall and annihilate them.

It is a relief to turn from these terrified *Days* to Mr. McKenzie's stately *Planes* on the Thames Embankment, all of which are pushing forth their summer verdure. Already a thin green line may be distinguished from the boats on the river, or from the bridges. Ere long this will be more apparent, and then the first impression, though a slight one, will be obtained of what will in the future be one of the noblest lines of trees in any city.

A LARGE *PAULOWNIA IMPERIALIS* is now in full flower in the garden of Mrs. Egerton, Grosford Lodge, near Wrexham. It was planted in 1854, and flowered last year as well as this year.

The foliage is so handsome, I am surprised that the Panlownia is not more commonly planted. It is in a sheltered valley close to the river Alyn. The flowers are very handsome, and smell like Violets.—M. E. G.

FRUIT PROSPECTS IN NORFOLK.

Of Grapes the first crop is very good, being now ripe. The last year's wood being formed and ripened before the drought set in, the Vines do not appear in any way affected by the season in respect to the thorough maturity of the wood, which is the best foundation for a crop. They made no effort at second growth. The second house being recently planted affords no facts; but of two later houses, the Vines in one seemed to make a more vigorous growth after the rains in August than at any other period of the season. The Vines in this made a very strong lateral growth and produced quantities of fruit, one or two bunches of which were allowed to remain, and these ripened in November. The first crop soon shrivelled after ripening; the excessive heat evaporated the water, and the saccharine matter being more concentrated, the Grapes were very vinous and sweet, and were pronounced to be of more than ordinary quality. The flow of sap which fed the bunches on the lateral growth did not seem to have the least effect on the bunches forming the first crop; thus, I think, proving that it does no harm to allow Grapes to hang for any length of time after they are ripe. In consequence of the late growth, the Vines did not break so strongly this season as usual, but they appear to have recovered now, and look vigorous and well.

Of Muscats, respecting the setting of which we have heard a good deal lately, I have the Muscat of Alexandria, also the Muscat Hamburg on its own roots, likewise grafted on the Muscat of Alexandria. All seem to have set alike, and have undergone the first thinning. The grafted Muscat Hamburg is about fourteen days in advance of the same kind on its own roots, and seven or eight days before the Muscat of Alexandria, the temperature being equal.

Nectarines are a very good crop, now just past stoning. Two houses which received no fire but just sufficient to repel frost, are later. The crop of Nectarines is better than that of Peaches. The latter set very well, but many did not swell. The earliest houses are the best. Figs are a full crop, and Strawberries are good, the late ones being best, as many of the first batch refused to show.

Cucumbers have done very well, and I am very glad to say that hitherto we have escaped the disease which has proved so disastrous to many. The greatest pest we have to contend with here, and in other places at which I have lived in the eastern counties, is thrips. I find the best way is to keep up a good succession of young plants, and to attend to cleanliness, for though fumigation is always recommended, it is not in all cases effectual. I have fumigated six nights in succession; it certainly affected the thrips, but it likewise affected the plants, and the thrips seemed to stand the smoke the better of the two. All kinds of washes are difficult to apply, and tobacco powder the insects show their utter contempt for by disporting themselves as merrily on a leaf dusted with it as on one with none. Some correspondence took place five or six years ago in this Journal, in which, if I remember aright, Mr. Pearson, of Chilwell, took part. Bruised laurel leaves were recommended, but they are not always efficacious. I think some of your chemical readers might do something for us; some of them, I know, are very fond of gardening. What is wanted is a vapour or smoke that no animal can breathe, but which will not affect the vegetation. Suffocation is the only thing that can effectually destroy the insects in all parts of a house at one time.—J. P., Gardener to Sir William Folke, Hillington.

POTATO FAILURES.

THE reason why early Potatoes have not come up well cannot, in my case, be from planting exhausted tubers. My failures are only with Kidneys; these are Mona's Pride, Royal New, and Myatt's Prolific. The early Rounds have come up well; these are Early Handeworth, Early Coldstream, Early Shaw, and Early Paintree. I have about half an acre planted with these seven sorts. The seed was kept and treated alike; the tubers were taken up in June last year, those for seed picked out, and spread thinly on shelves in a dry airy room, and the room was only closed in frosty weather. They received no further attention until planting (on the 9th and 10th of March), they were then sprouted about an inch; the sprouts

were reduced to one or two, and carefully planted. Early Rounds have scarcely missed a plant. Mona's Pride is about half a crop; Royal New and Myatt's Prolific have only from seven to twelve plants in a row 47 yards in length.

What conclusion can we come to from this? The seed was all equally ripe when taken up, and all had the same cold ground and weather in March. Or, are the Rounds harder than the Kidneys? Mr. Record says (page 369), Potatoes do not play these pranks in cold frames. About this I cannot say anything.

I was so well pleased with Early Coldstream last year that I forced no other, and think myself fortunate in so doing. I tried my early Potatoes yesterday. Of Early Coldstream there is a good crop, and large enough for table. The strongest plants of Mona's Pride are quite as early, and as heavy a crop. Handeworth and Shaws are quite a week later.

I hope other readers will communicate their failures of Potatoes, as it is through failures we attain success.—H. H.

CRYSTAL PALACE SHOW.

THE second great Show for the season at the Crystal Palace was held on the 5th inst., and, as usual, there was a large and excellent display of flowering plants, supplemented by an extensive exhibition of table decorations, which constituted a new and attractive feature. The day being one of the warmest and most delightful we have had this summer—in fact, the first real summer day, the building and grounds were thronged with visitors.

The collections of Stove and Greenhouse plants were numerous, some of the highest merit, and, with a few exceptions, on the whole very good. Many of the plants had appeared at the Royal Horticultural Society's Show on the previous Wednesday and Thursday, and our notes, therefore, will be shorter than usual. In the unersymen's class for ten, Mr. Williams, of Holloway, was first, and had a fine specimen of *Phenocoma prolifera*, not yet in full beauty; *Anthurium Scherzerianum*, with nineteen spathes, and more advancing; *Stephanotis floribunda*; *Clerodendron Thomsoni*, not, however, showing so much of its crimson corollas as usual; *Azalea Brilliant*, *Aphelexis macrantha purpurea*, an excellent *Dracophyllum gracile*, *Pimelea decussata*, and the pretty *Boronia pinnata*. Messrs. Jackson & Son, Kingston, were second, and had *Pimelea Hendersoni* in beautiful condition, though the plant was not so large as some others exhibited, an excellent *Erica ventricosa coccinea minor*, *Rhynchospermum jasmuinoides*, *Genetilis tulipifera*, and other good specimens. Mr. Tanton, of Epsom, who was third, had a beautiful *Aphelexis, Allamanda grandiflora*, and other well-grown plants. In the corresponding class for amateurs, Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, took the first place with a fine collection, the most noticeable plants in which were *Allamanda grandiflora*, *Eriostemon basifolium*, *Aphelexis macrantha purpurea* finely coloured, *Erica Cavendishii*, *Ixora coccinea*, and *Franciscia calycina*. The second prize went to Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, who had the rose-coloured *Adenandra fragrans*, *Stephanotis floribunda*, *Rhynchospermum jasmuinoides*, and the showy *Dipladenia amabilis*. Mr. Wilkie, gardener, Oak Lodge, Kensington, was third, and sent, among others, his fine *Medinilla magnifica*, *Dracophyllum gracile*, *Franciscia calycina*, and *Erica tricolor impressa*.

In the amateurs' class for six plants, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first, with a very fine *Aphelexis*, *Bongainvillea glabra*, nearly 1 foot in diameter; a large *Erica Cavendishii*; *Dracophyllum gracile*, very fine; *Stephanotis floribunda* and *Clerodendron Balfourii*, both excellent. The second prize went to Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet, who had a fine plant of *Phenocoma prolifera* Barnesii, the bright-coloured flowers of which were not so numerous as to give it that effect which it would otherwise have had. In the same collection there were also good examples of *Pimelea spectabilis* and *Acrophyllyum venosum*. Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, was third, Mr. Wilkie fourth, and an extra prize was awarded to Mr. Peed. In the open class for collections of the same number of plants, the last-named exhibitor was first, showing a small but finely-bloomed *Allamanda grandiflora*, *Ixora coccinea*, and *Polygala oppositifolia*. The second, third, and fourth prizes went respectively to Mr. Wheeler, gardener to J. Philippott, Esq., Stamford Hill; to Mr. A. Wright, gardener to C. H. Roberts, Esq.; and to Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park. Mr. Kemp, who also exhibited in this class, had *Acrophyllyum venosum* with spikes $\frac{1}{2}$ inches long, and much whiter than those of any plant of the same kind shown, and it only wanted to be as large as the others to be at least twice as effective. We also noticed in Mr. Wright's collection a very good *Dipladenia amabilis*.

Mixed collections of fine-foliaged and flowering Stove and Greenhouse plants were neither so numerous nor so effective as at Kensington on the previous Wednesday, and as prizes were not offered for Ferns, there were but few of these. Mr. Carr, who was first for a collection of twelve, had good but not large examples of *Croton angustifolium* and *variegatum*, a well-coloured plant of *Dracena ferrea picta*, *Alcacia metallica*, and a prettily-flowered specimen of *Erica*

ventricosa magnificent. Mr. Foreman, gardener to G. Manley, Esq., Denmark Hill, was second, and sent *Anthurium regale* and *Scherzerianum*, *Alocasia metallica* with finely-coloured leaves, *Cissus discolor*, and *Mussaenda frondosa*, with its white calycine leaves freely developed. The first prize for six went to Mr. Wright, in whose collection were the elegant Fern-like *Cupania filicifolia*, *Gleichenia semivestita*, very beautiful; a fine *Croton variegatum*, and a good *Aplilexis*. Mr. Donald was second, Mr. Carr, third, and Mr. Wilkie had an extra prize.

Of Heaths the specimens shown were excellent, especially those of the varieties of *ventricosa* and *tricolor*; also *Eassonianna*, *Alberti*, *perspicua nana*, elegant, *candidissima*, *Fairriann*, *Candoleana*, *florida*, *Massoni* major, and *Juliana*. The prizes in the nurserymen's class were taken by Messrs. Jackson, Morse, Williams, and Rhodes; and in the amateurs' class by Messrs. Peed, Ward, Kemp, and J. Wheeler. In the open class they were taken by Messrs. Ward, J. Wheeler, Morse, and Peed.

Azaleas, with the exception of Mr. Carson's eight beautifully-flowered plants, were poor. Mr. Wilkie and Mr. G. Wheeler were respectively second and third for the same number. In the class for six, the last-named exhibitor and Mr. Peed had nest well-bloomed plants, and prizes were also awarded to Mr. Wilkie and Mr. J. Wheeler.

Orchids were not shown in such large numbers as in some previous years, nor have they been so anywhere this season. Mr. Williams was the only exhibitor in the nurserymen's class for ten, and took a first prize with nearly the same collection as shown at Kensington. The best collection of eight came from Mr. Wilson, gardener to W. Marshall, Esq., Enfield, and included a fine specimen of *Cypripedium caudatum* with eight flowers, having petals nearly 2 feet long; a fine variety of *Cattleya Mossie*, *Dendrobium Dalhousieanum*, *Vanda tricolor*, *Lælia purpurata*, *Eriopsis rutidobulbon*, with three spikes a foot long; and *Arides lobbii*, with two spikes which will be very fine when fully developed. Mr. Young, gardener to W. H. Stone, Esq., M.P., was second; Mr. Woodward, third; and Mr. Peed, fourth. Mr. Woodward had very good examples of *Dendrobium densiflorum*, *Angolan Clowesii*, and *Lycaste aromatica*. For six, Mr. Wilson was again first with *Odontoglossum Alexandre* with four most beautiful large-flowered spikes; *Dendrobium densiflorum album*, *Lælia purpurata*, *Cattleya Mossie superba*, *Vanda anavis*, and *Cattleya Warneri*, all in fine condition. Mr. Ward came second, Mr. Wright, third; and extra prizes were given to Messrs. Young, Woodward, and Peed.

For Coleuses, of which there was a good display, the prizes went to Messrs. Downie & Co., Cannell, Turner, and Woodward. Mr. Parker, Tooting, sent a group of Orchids and Succulents; Mr. Williams, Pains, Yuccas, Ferns, *Sarracénias*, *Cephalotus follicularis*, &c.; and Messrs. Downie & Co., and Messrs. Carter & Co., pretty miscellaneous groups, including Palms, Coleuses, Variegated Zonal Pelargoniums, Caladiums, and numerous other plants. Messrs. Dobson contributed herbaceous Calceolarias, and Mr. Ware, of Hale Farm Nursery, Tottenham, a numerous collection of hardy plants and cut flowers of 115 kinds. There was, in addition to the other attractions of the Show, an exhibition of *Rhododendrons*, by Mr. Anthony Waterer, of Knap Hill, not, however, either so pretty or extensive as that from the same place at South Kensington.

THE bold attempt of the Directors of the Crystal Palace Company to interpolate another show in the very midst of the busiest season for exhibitors, when exhibitions are as plentiful as Blackberries, was crowned with the success it deserved. A brilliant day, almost the first of summer, shone upon them; the cold north-easterly winds took their departure; and everything was fresh and fair. An immense number of people were present; while the Show itself attracted not only the usual exhibitors, but brought into play by the new feature of Table Decorations a large number unused to the exciting field of friendly strife. It is an evidence of the truth of the remarks I made lately with reference to flower shows, that while the Royal Horticultural Society had a very large assemblage on Wednesday and an admirable exhibition, at the Crystal Palace thousands of visitors were present, and the plants were in prime condition also. I shall be anxious to know the result of the Royal Botanic Society's show, for if that be successful it will effectually dispose of the notion that we have too many shows for this huge metropolis of ours.

The Table Decorations formed the most novel, and I believe the most generally attractive feature of the Show; and it is an evidence of the liberality of the Crystal Palace Company, that although they offered £20 as the amount to be distributed, yet when the Manager saw how large and excellent was the collection staged, the instruction given to the Judges was that they were to double it and give £40. Instead of entering into detailed descriptions of each table that obtained the prizes, I think it will be better to give such general remarks as may afford an idea of the merits and demerits of the groups exhibited. I think I may, without fear of contradiction, say that there is evidently a vast improvement in this matter since the time when the late Sir Charles Wentworth Dilke offered his prizes at South Kensington. As a general rule there was not that want of taste which even titled ladies were not ashamed to show, but a sense of the proprieties of harmony, elegance, and general effect was generally manifest. There is still in some minds a lingering notion that glass, and gilt, and glitter are to take the place of flowers; but this is a mistake. It was manifest that

the collection which commenced the line of tables was arranged on this notion, and I have no doubt the exhibitor was grievously disappointed in not obtaining the prize, and that many of the public would agree with him; but this was the mistake here, and it was most flagrantly manifest in a table not staged for competition, and arranged by Messrs. Roberts & Bertram, the excellent purveyors to the Crystal Palace Company. It was very grand, but the taste was very questionable. Another mistake, I think, after mature consideration, is the placing of the small specimen vases with a few flowers in them to each guest. Ladies so universally now-a-days carry bouquets with them, and gentlemen as invariably indulge in a button-hole bouquet, that these are not required, and are, indeed, in the way where three or four wine glasses are placed to each guest. Then it is a mistake to have very highly scented flowers amongst those placed on the table. I saw, for instance, some white Lilies. Now, there ought to be nothing so potent as this. Some people it would make ill, while the delicate flavour of many dishes would be spoiled by having them under one's nose. Do not imagine I am a Brillat-Savarin, but I must take all these matters into account. And yet once more. Some mistakes were made—1st, in overcrowding the tables with separate bouquets; 2nd, in putting in young fronds of Ferns, which would die before half the dinner was over; and 3rd, in placing heavy flowers on the top dish of March's stands; 4th, in having stands which obstructed the view and prevented conversation.

The table which obtained the first prize, exhibited by Mrs. Dickson, of Covent Garden, was arranged by Messrs. Dobson, of St. James's Street, and consisted of three stands for the centre, modifications of Mr. March's, but very tastefully set up, and embraced by a narrow border of flowers placed in shallow tin troughs, neatly arranged. There was great taste displayed in this, as might have been expected from the eminent firm by which it was set up. Indeed, amateurs have but little chance when entering the field with such tried hands. The collections from Mr. Baster, of Goring, Sussex, and Mr. Chard, gardener to Sir F. Bathurst, Bart., were placed equal second. Points in each were remarkable, and absent in the other, the feathery lightness obtained by the Grass and Maiden-hair Fern in the one, was somewhat marred by want of colour. Had the Roses been dark instead of light it would have been charming, and it should not be forgotten that *Gloire de Dijon* and such-like Roses become almost white at night. The other collection showed a greater attention to colour and harmony, but wanted a little the lightness that marked the foregoing. Space would not permit me to mention all the different groups. One of artificial flowers was remarkable for the correct imitation of nature, and one exhibited by a young lady of the name of Hassard, showed a correctness of taste which needs only a little practice to attain excellence; but certainly the most novel innovation and the most striking arrangement of all, was one by Mr. Wilkinson, the indefatigable manager of the flower shows, which was placed in the theatre. It consisted of a long table hollowed-out in the middle, this centre consisting of a zinc trough filled with water in which gold fish were swimming about. In the centre was a tall stand of flowers beautifully arranged, smaller ones were arranged at various distances, while from the middle of the centre one a jet of water sent its gentle drip over the foliage. The edges were lined with moss, and altogether one can hardly imagine anything more delightful on a warm summer evening than a dinner-table thus arranged; and great credit is due to Mr. Wilkinson for the taste displayed.

I have lingered so long on these matters that I have but little space left for the rest of the Show. In pot Roses, Mr. Turner was first in both classes, and his collection of smaller ones was the theme of universal admiration. It contained well-bloomed plants of *Madame E. Appert*, *Madame Margottin*, *Horace Vernet*, *Miss Ingram*, *Madame George Paul*, *Madame Alice Dureau*, *Senateur Vaisse*, *Reine du Midi*, *Mons. Woolfield*, *Madame Furtado*, *Madame Clémence Joigneaux*, *Alba Rosea*, *Monsieur Noman*, *Souvenir d'un Ami*, *Victor Verrier*, *President Willermoz*, *Charles Lawson*, *Felix Genero*, *Mlle. Thérèse Levet*, and *Enfant d'Amengny*. Messrs. Paul & Son were second with large pots, but did not exhibit in the other class. In cut Roses, Mr. Mitchell was first for fifty Roses, and Mr. Turner first for twenty-four. In the box of the former were some grand blooms of *Baroness Rothschild*, *Clotilde Rolland*, *Maréchal Niel*, *Prince de Portia*, *Mlle. Thérèse Levet*, and *Nardy frères* (new). Messrs. Paul & Son were second, and in their collection were some good blooms of *Duke of Edinburgh*, *Exposition de Brie*, *Maréchal Niel*, *Duchesse de Caylus*, *Alfred Colomb*, &c.; while Mr. Turner's box of twenty-four contained admirable examples of the following:—*Leopold Hansburg*, *Lælia*, *Souvenir de Charles Montaut*, *Abel Grand*, *Paul Verrier*, *Duchesse de Caylus*, *Souvenir d'un Ami*, *Madame Boll*, *Charles Verrier*, *Olivier Delhomme*, *Celine Forestier*, *Mademoiselle Annie Wnod*, *Gloire de Dijon*, *Miss Ingram*, *Antoine Ducher*, *Mademoiselle Marguerite Dombain*, *Madame Victor Verrier*, *Niphotos*, *Rev. H. H. Dombain*, *La France*, *Alfred Colomb*, *Madame Margottin*, *Maréchal Vaillant*.

Pelargoniums were exhibited in fine condition by Messrs. Dobson and Son, of Isleworth, and Mr. Ward, gardener to F. G. Wilkins, Esq. They were evidently plants which had experienced ere now the fostering care of Messrs. Turner, Bailey, and Fraser, and kept up well their former reputation. Messrs. Dobson's plants were *Patroness*, *Caractacus*, *Mary Hoyle*, *Leotard*, *Desdemona*, *Pericles*, *Lilacinnm*, *Belle of the Ball*, and *Fair Rosamond*. Mr. Ward's comprised *Lilacinnm*, *Lord Clyde*, *Fair Rosamond*, *Alabama*, *Spotted Gem*, *Pericles*, *Ex-*

hibitor, and Charles Turner. Mr. Turner had some good seedlings of these. Warrior, Sultan, Corsair, and Harold, very dark, obtained first-class certificates; and Maid of Honour a second-class one. Messrs. Carter & Co. and Downie, Laird, & Laing, exhibited a nice collection of other novelties, including some of the Tricolor and Bicolor Pelargoniums noticed at previous shows.—D., Deal.

ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW.

IN resuming our account of this Show, of which a report was given last week, it will be most convenient to begin again with the flowering stove and greenhouse plants, with the view of supplying details which were necessarily omitted. In addition to the plants mentioned at page 371, the following were noticeable—viz., *Erica depressa* and *Phenocoma prolifera* Barnesii from Mr. Wilkie; a fine plant of *Azalea Brilliant*, *Boronia pinnata*, *Pimelea mirabilis*, and *Phenocoma prolifera* from Mr. Williams; *Stephanotis floribunda*, *Genetylis talipifera*, *Clerodendron Balfourii*, *Erica Cavendishii*, and *Bougainvillea glabra* from Mr. Ward; and a large finely-bloomed *Pimelea spectabilis* from Mrs. Glendinning & Sons, which received an extra prize as a single specimen.

Among the Azaleas, the first prize for nine was taken by Mr. Carson, gardener to W. R. G. Farmer, Esq., Nonsuch Park, Cheam, with far the best plants of any shown. Apollo, Madel, Criterion, Stanleyana, Barclayana, and Holford were particularly good. Messrs. Lee were second in the same class, and Messrs. Ivery third. For six, Mrs. Glendinning & Sons were first with large specimens in tolerably good bloom, and Extranei was fine; Messrs. Lee being second, and Mr. Williams third, with compact well-flowered plants. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., who was first in the amateurs' class, had good examples of *Madame Mieliez* and *Duc de Nassau*; and Mr. Wilkie was second. For six in 12-inch pots, the positions of the last two exhibitors were reversed.

Of Heaths there was a fine display. The best eight came from Mr. Ward, and included very fine examples of *Eassouiana*, *Candolleana*, *Tricolor elegans*, *Fairriana*, *Lindleyana*, *florida*, and *candidissima*. Mr. Peed was second in the same class, and Mr. Morse third, having, among other kinds, fine specimens of *ventricosa grandiflora* and *ventricosa magnifica*. Mr. Ward was again first for six, among which were very fine plants of *tricolor Wilsoni* and *tricolor elegans*; Mr. J. Wheeler being second, and Mr. Kemp third. For six in pots of any size, Mr. Ward was likewise first with plants in fine bloom ranging from 18 inches to 2 feet in diameter, and consisting of the following kinds—viz., *eximia superba*, *tricolor flammea* and *impressa*, *Candolleana*, *Maesoni major*, and *Juliana rubra*. Mr. J. Wheeler was second, and Mr. Kemp third.

The best collection of *Amaryllis* was that of Mr. Baxter, gardener to C. Kieser, Esq., Broxbourne, in whose collection Duke of Cambridge and Kieseer were the most showy of the dark-red varieties, whilst of the lighter-coloured, Queen Victoria, edged with white, was pleasing.

For twelve Alpine plants, Mr. Ware, of Tottenham, took a first prize with the following:—*Sempervivum globiferum*, tipped with brownish red; *Sedum elegans* and *hispanicum*, both very pretty; *Sempervivum californicum* and *montanum*; *Oxalis corniculata rubra*; *Sedum Sieboldii*; *Saxifraga Stansfieldii* and *ceratophylla*, *Achillea clavellana*, *Antennaria dioica*, and *Lysimachia nummularia anrea*. The same exhibitor was also first for twelve hardy variegated plants, Messrs. Salter being second. *Thymus citratus variegatus* from the latter was dwarf, and very neat. Mr. Ware also received a fourth prize in the miscellaneous class for a beautifully-arranged group of flowering and ornamental-foliaged Alpine plants.

For *Echeverias*, Mr. Parker, of Tooting, was first with *E. secunda glauca*, *secunda glauca major*, *atropurpurea*, *pulverulenta*, *glauca*, and *metallica*. The second and third prizes went to Messrs. Salter and Messrs. Carter & Co. For six *Agaves*, Mr. Williams took the first prize with *Agave americana anreo-variegata*, *densifolia*, *americana medio-picta*, *lophantha*, *gemmiflora*, and *filifera longifolia*. For a pair of *Yuccas*, Mr. Williams was also first with *Yucca aloifolia variegata*; he was likewise first for a pair of *Dracaenas*, with *D. indivisa* about 10 feet high, and for tree Ferns with two tall stately plants of *Dicksonia antarctica*, with thick trunks.

Variegated Zonal Pelargoniums may be passed without remark, as they have so recently been fully reported on. Messrs. F. & A. Smith were first with *Lady Cullum*, *L'Empereur*, *Coronet*, and *Jetty Lacy*, and *Impératrice Eugénie* and *Miss Bardett Coutts*, Silver Tricolors. Mr. Turner was second with *Lady Cullum*, *Sophia Dumaresque*, *Sophia Cusack*, *Princess of Wales*, *Excellent*, and *Impératrice Eugénie*. Messrs. Carter & Co., had a third prize for Mrs. Dunnett, *Sophia Cusack*, *Sir R. Napier*, *Edwinia Fitzpatrick*, *Aurora*, and *Louisa Smith*. Mr. Stevens, Ealing, was awarded an equal third prize. Messrs. E. G. Henderson also furnished a nice group.

In the miscellaneous class the first prize was awarded to Messrs. Lee, of Hammersmith, for a group of fine-foliaged and flowering plants; the second to Mr. Burley, Albert Nursery, Bayewater, for Palms; and the third to Mr. Parsons, gardener to R. Attenborough, Esq., Acton Green, for *Selaginellas*, of which there were fine pans of *apoda* and *formosa*, and beautiful cones, nearly 2 feet high, of *denticulata*, *stolonifera*, and *dichrous*. Mr. Parker, Tooting, received a fifth

prize for a collection consisting of *Yuccas*, *Echeverias*, *Sedum virens monstrosus*, having a twisted cockscomb-like appearance, and a number of other plants. Another fifth prize was awarded to Mr. C. Noble, of Sunningdale Nursery, who had *The Queen*, and other fine varieties of *Rhododendrons*. Mr. W. Paul, in addition to a fine collection of *Roses* in small pots, for which he received an extra prize, sent a group of the fine New Double Crimson Thorn, showing its profuse blooming character and adaptability for pot culture. Mr. Smith, gardener to C. Walton, Esq., Manor House, East Acton, had well-bloomed plants of *Hoteia* or *Spirea japonica*; Mr. Ware, a collection of cat flowers, *German Irises*, and *Paeonias*; Mr. Hooper, Bath, cut blooms of *Pinks*, *Pansies*, and *Ranunculuses*; and Messrs. Salter a collection of *Pyrethrums*, some of which were quite as fine as many of the *Chrysanthemums*—for instance, *Maximum plenum*, *Rubrum plenum*, and *Floribundum plenum*. Miss Bray, of Chelsea, received a special certificate for a case of beautifully skeletonised leaves and seed-vessels; and an extra prize was given to Mr. T. A. Dickson, of Covent Garden, for bouquets. Similar awards were made to Mr. Turner, of Slough, for his collection of new Pelargoniums, and to Mr. Stanton, Greenwich, for a large specimen *Rhododendron*.

In the report of the fruit last week, the second prize for White Grapes was stated to have been taken by Mr. Melville, instead of Mr. Miller, of Combe Abbey Gardens.

SUB-FLORAL COMMITTEE.—The following certificates were awarded at the great Show of the season. Mr. Turner received first-class certificates for the following Show Pelargoniums—such flowers have never been seen before; they were all of the highest character—*Lady Carlington*, *Marmion*, *Maid of Honour*, *Corsair*, *Her Majesty*, *Pretender*, *Sultana*, and *Warrior*; also one for *Bright Star*, a beautiful Silver Bicolor with intensely bright scarlet flowers. A white sweet-scented Clove, from Mr. Turner, named *The Bride*, also received a first-class certificate. This is a most valuable addition for bouquets and other purposes. Mr. Hoyle received first-class certificates for Show Pelargoniums *Bonnie Charlie*, *Gratulation*, and *Helkar*. Messrs. Smith, of Dalwich, received a first-class certificate for a scarlet Zonal Pelargonium called *Lord Stanley*, very brilliant in colour. Mr. Williams, Holloway, received first-class certificates for *Lælia marginata* and *Littonia modesta*. Messrs. Veitch received first-class certificates for *Masdevallia coccinea*, *Begonia Sedeni*, *Cretou Veitchii*, and a beautiful Fern, *Davallia Moorei*.

From E. J. Lowe, Esq., Highfield House, came a numerous collection of seedling British Ferns, and first-class certificates were awarded to the following varieties of *Scolopendrium vulgare*—viz., *annuum*, *dividendum*, *allokoton*, *ornamentum*, *korumbosphoren*, *gloriosum*, *Babingtonii*, and *Thomsoni*; also for *Athyrium Filix-femina Rickettsiae*, *hallistrum*, and *kalon*. Messrs. Ivery & Sons likewise received a first-class certificate for *Lactrea Filix-mas cristata crispata*.

THE NATURAL PRODUCTS OF RED RIVER, NORTH AMERICA.

Our nearest Pine (Spruce) forests are about forty-two miles from Winnipeg, lying towards the north-east, whence the logs are hauled in to the mills by oxen in the winter. The amount of lumber used at present is about 150,000 feet per annum, and the quantity is steadily upon the increase. But as very few of our buildings are built entirely of lumber, Canadians cannot judge of the number of houses put up here by their own criterion. The walls of most of our houses are built of Oak or Poplar logs, hewn on two sides, and the lumber is only used for floors, windows, and inside work. Not until lately were any houses built entirely of lumber. The White Spruce is found in many places in this territory, and ranges from 6 inches to 3½ feet in diameter.

There seem to be immense forests of Firs in the vicinity of the Rocky Mountains, on the eastern slope. The overland trail between Edmonton and the mountains, runs for a long distance through immense forests of White Spruce, Black Spruce, Tamarac (American Larch), Hemlock, Balsam Fir, and the Banksian Pine. A considerable amount of Spruce and other building material is to be found upon the Peace River and the upper Mackenzie. The fact is, lumber can be made sufficiently for the wants of the country for generations to come, although we shall never be able to make it an article of export as in Canada. White Cedar, for shingle-making, is found between Red River and the Lake of the Woods. Oak is also found in this settlement in considerable quantity; also Ash and Elm. Poplar is found in immense quantities, and springs up in every direction if the prairie fires are kept down for a few years. Groves of it are seen scattered over the prairie in all directions, and they afford the firewood and fencing materials for the settlement. The Whitewood Poplar and the Basswood grow to a considerable size, and are used for lumber, as well as the White Spruce. The Ash-leaved Maple also extends from here to the Saskatchewan, and is used by the Indians for the manufacture of sugar. It never grows to a large size, and is of little use ex-

cept for its sap, and as an ornamental tree. The Bird's-eye Maple is to be found on an island in the Lake of the Woods.

Our wild fruits consist of the Plum, Black Cherry and Choke Cherries, Strawberry, Raspberry, Serviceberry, Whortle or Huckleberry, Moschberry, Pambina Berry, Cranberry, Black Currant, Red Currant, and the Hazel Nut.

The wild Red Plum is much used for preserves, and is in great demand at the proper season. This fruit is much improved by cultivation, and will afford a fine stock for the grafting of foreign varieties. The Serviceberry is very abundant, and is dried by the Indians and others in great quantities. It then resembles the Malaga Currants, and is used for the same purposes. It is also used in what is called berry pemican.

Our prairies are covered with nutritious grasses, which are the only food for our stock both summer and winter. Upon the Saskatchewan, the wild Pea or Vetch mingles with the grasses of the prairie and affords feed of which the animals are inordinately fond.—(Nor'-Wester.)

"BRING THE RATHE PRIMROSE."

"Milder gales and warmer beams
May the gaudier flow'rets rear;
But to me the Primrose seems
Fairest gem that decks the year."

Most interesting is it from time to time to take up "our Journal," after the toils of the day are past, and con over the accounts of winter and spring gardening. A foreigner might think the practice is still in its infancy—just beginning to make itself known. Well, let us go on, trusting that all interested in the cultivation of spring flowers will join in the revival, and tell us of their success or of their inability to succeed, as the case may be.

Among the many plants used for spring gardening I know none more interesting than the extensive family of Primulas, and much do I wonder why more has not been said about them. I have no fear of being contradicted when I say that every living person from childhood to old age likes Primroses. No doubt the Auriculas hold first position, and deservedly so, for in reality they are some of Flora's choicest gems. No one can look on the beauties with which they are gifted without delight. Staged for exhibition and well arranged, I have known them the prime object of admiration. Much has been said at different times and in different places about their cultivation, and I am sorry to see them in so few hands. To obtain a collection requires money, time, patience, experience, and perseverance, and then to keep them all right is no easy matter. We are not all in possession of these requisites to procure a first-rate collection, but I hope to see the time when Primroses will be within the reach of many more who are interested in them. If we cannot all be exhibitors, we can have a few in our borders to afford us pleasure during spring and early summer. Raising them from seed is an interesting pursuit; seed is cheap, a packet often affords many varieties, and there is some charm about a seedling at all times.

Primulas have a very extensive range, inhabiting widely different situations; but what we call "our own Primroses"—for they are among the prime heralds of spring, often peeping up among the leaves and grass in some sheltered nook, reminding us of the spring time, and possessing an interest all their own—who is not delighted with them at their first appearance in March's chilly days? How many of us have been delighted in the April sunshine with the thought of a ramble to the Primrose hill to cult our handful of its occupants, and carolling as we advanced towards them in our childish glee—aye, and in our more matured years too—

"The Primrose—the Primrose peeping is seen
'Mid pale Moss and 'mid darker Ivy green."

Pity it is that such lovely flowers are not more cared for. It is true that we have a few different kinds in cultivation, but we cannot have all. Like many other families of plants, their name is legion. We hear now and then of this and the other person using them for early decoration, for which many of them are well adapted—by many I mean the hardiest and the earliest.

All are very beautiful, but more especially these gems known as double-flowering kinds—as the double lilac, double white, the crimson, the yellow, and the intermediate colours. Then we have some others that are really beautiful, being of taller habit, as Negro Boy and Double Sweep, which I think in early spring are invaluable; and when a collection of them is gathered together and judiciously arranged no flowers in their

season can surpass them. I am more in love with them than I ever was, since I saw this spring a gathering of the Primula clan. It will not be easily erased from my memory. Four distinct kinds of double Primroses were planted alternately in groups, and among them was planted *Veronica erythraea*, white and blue. Sown in the autumn, and having stood through the winter without protection, the *Veronica* makes much stronger plants than when sown in the summer. I believe the stronger the plants the more intense the colour.

Many kinds of Primroses may be used in several ways for decorative purposes. For pots in-doors they are not to be despised. Most of them are easy to cultivate, but the *Auricula* requires care. The commoner kinds will do well in any ordinary soil, but most of them like a sound, retentive, moist loam with leaf mould and a little sand. They prefer a rather shaded situation to make their growth. After they have done blooming they should be transplanted; those intended for the spring garden are best potted and plunged in the shade, and watered as needed, because drought is injurious to them. The others may be planted in shady borders where they are to remain.

There are many other kinds really beautiful—as *cortusoides* and *denticulata*, both very fine when well cultivated—*marginata*, *involuta*, *nivalis*, to say nothing of those of later introduction, as *amena* (by some called *concolor*), *longiflora*, *purpurea*, *viscosa*, and many more.

There is another star in the train, however, I must mention, and which is not seen nearly so often as it ought to be, *Primula farinosa*; it grows well in a moist shady border, and is not very particular as to soil, though in its native places it is met with in moist boggy meadows and pastures by the sides of water, in company with *Pinguicula vulgaris*, and in mountain pastures. To see *Primula farinosa* in its glory, you must look upon acres of ground studded over with its lilac, star-like flowers—that is a sight not easily forgotten!

Let me add a word about *scotica*, a splendid little fellow but seldom seen. It leaves the impression that it is closely allied to *farinosa*, but it is much less and of a different habit and colour. When met with in first-rate trim it is a gem of the first water.

I trust the time is not far distant when we shall see this favourite race of plants much improved, and far more cultivated. They will repay any amount of trouble and expense we may bestow upon them, but they cannot be had without both. Seed of many kinds may be procured at a cheap rate, and a packet will sometimes afford hundreds of plants of the commoner kinds of different shades. For those sparkling gems that appear from time to time by name we must apply to the vendors and pay for them, and then they are not too dear, although some of them appear to have an almost fabulous price attached to them—but they are worth it.—M. H., *Acklam Hall, Middlesbrough-on-Tees*.

NEW HOTHOUSE BOILER.

I HAVE, at last, the first of Foster's patent hothouse boilers at work. I was so pleased with the model that I ordered one at once, and expected to have it fixed some weeks since. It appears, however, there were unexpected difficulties encountered in the casting, but the skill at the command of the great Buterley Company has overcome them. I am glad to say it quite answers my expectation; indeed, it could hardly fail to do so.

As the fire comes in contact with nothing but iron backed by water, and traverses the boiler three times from end to end before entering the flue, it must be much superior to any boiler which has come under my notice. A more handful of fire made the water in 600 feet of 4-inch pipe quite hot whilst I was at dinner, and so rapid was the circulation that on turning a valve connecting 200 more feet of piping in a frame, the return pipe was quite hot in ten minutes. Though my boiler is only the second size—3 feet 9 inches long—I feel it has comparatively nothing to do. I intend to add 600 feet of piping to it, and then I think it will be far more than sufficient for its work.

Believing as I do that wrought iron boilers, from their liability to rust when not at work, are quite unfit for horticultural purposes, I feel that the inventor of a cast-iron boiler more perfect in form than any yet made of wrought iron, has conferred a great benefit on the gardening world.

To the owner of one house where coals are cheap, it may

appear a matter of little moment that half the heat from the coals burnt under a boiler is lost; but where fuel is expensive, or where the houses are numerous, it is a matter of importance. My coal bill is between £100 and £200 a-year, and a boiler that will do double the work with the same consumption of fuel as those I have in use, will be very valuable.

To those who feel any interest in the subject, I say Come and see it, and if you do not say it is an enormous advance on any yet out, I shall think—well, I won't say what.—J. R. PEARSON, *Chilwell*.

VISITS TO GARDENS PUBLIC AND PRIVATE.

MADRESFIELD COURT, THE SEAT OF EARL BEAUCHAMP.

THE name of this place has been so much before the public lately, in connection with the new Grape raised there, that it was not to be wondered at, when at Malvern on business, I should have pleasure there too, and trdged out to see the place and its surroundings. I was fortunate in finding Mr. Cox at home, and under his guidance was enabled to see all that has been done, and is now doing there. A few brief notes on the subject may be interesting—to those, especially, who are growing the Grape which he has raised.

Madresfield Court is situated about two miles from the town of Great Malvern, in the rich plain that lies at the foot of the Beacon Hill. It is so shut in by the ample foliage of the park, that very little of it can be seen until you are quite close upon it. The house was a fine specimen of Tudor architecture, but having fallen into a dilapidated condition, was some years ago pulled down and rebuilt. The front part of the house remained; this, too, was pulled down, but in order to preserve the character of the old Court, was rebuilt with the same materials, thus preserving its antique character. The house is entirely surrounded by a moat, and an old bridge spans it at the entrance. There is a small terrace garden, and then on a lower level a large grass garden, which has just been planted with bedding plants, bordered by a bank of Rhododendrons, and fenced off with Yew hedges. Amongst the bedding plants I noticed *Viola lutea*, very good, and an old Tricolor—Glowworm, which seemed to be bright in colour. Around the house everything is in a state of transition. Stables are to be pulled down, avenues to be made, pinetums to be planted; while one avenue, formed of *Picea nobilis*, and called Countess avenue, because each of the trees was planted by a lady of that rank, has been made, and it is proposed to continue it with another of *Pinus Nordmanniana*.

Between the house and the kitchen garden there is a wilderness of about four acres, which is shortly to be planted, and by the judicious use of a stream which runs through it, some good effects will be produced. The kitchen garden is entirely new, and contains about three acres. The old kitchen garden was near the house, and obstructed the view, but about three years ago it was dismantled, and the present one has been laid out under the plans and directions of Mr. Cox, so that everything has a new appearance. The Vines are all young, many of the quarters hardly laid out, but all having the appearance of extreme neatness, and evidencing a master's hand. Here I saw Madresfield Court Muscat in nearly all its stages, in pots, as two-year-old Vines, and as yearlings, and in all it gave promise of fulfilling the expectations formed of it. It sets well, is prolific, and carries large, well-shouldered bunches of handsome Grapes. It is, as is well known, a cross between the Black Alicante and the Muscat of Alexandria, retaining the colour of the former and a long oval berry. I tasted it last autumn at Kensington, and then considered it good, and although the berries I tasted here were not quite ripe, yet they were rich and luscious in flavour, with a decided "whiff" of Muscat. The whole of Mr. Cox's Vines are admirably managed, and I have never seen finer examples of growth than these young Vines exhibit. They have been rather hardly worked, too, in the matter of fruit, so that their appearance is the more creditable. Fruiting and succession Pines were good, while Fig, Peach, and Nectarine trees were producing good crops, although so recently planted. In the plant houses were many well-grown specimens of Heaths, Azaleas, &c., and I have not for a long time seen such grand plants of *Leschanaulzia biloba* major as here, covered with their splendid deep blue flowers. In these days, when bedding-out so taxes the energy and time of most of our gardeners, they have but little leisure to attend to such plants as these.

I have not seen for some years so fine a piece of British Queen Strawberries as Mr. Cox had, and along with it I noticed

some rows of a Strawberry I do not recollect having seen before (but which, he says, was sent out by Mr. Turner, of Slough), called Oxonian. It was remarkable for its lateness, for while all other Strawberries were in full bloom and setting their fruit, this has shown no flower yet. It is in this way valuable also for forcing, as it comes in between the Keens' Seedling, Princess Alice Maude, &c., and the earliest out-of-door fruit. Red Currants are here grown as pyramids; and as each tree occupies a square yard only of ground, and produces a gallon of fruit, it may be at once seen that it is an excellent plan.

It is always a matter of regret to me that in noticing these places my visits are always so hurried, that my notes are necessarily brief. I might, of course, easily spin-out a yarn, but as my object is to give simply the more salient points, and perhaps, after all, it is more likely to be profitable than a long-winded story, I have only to add now that I experienced from Mr. Cox the same courtesy and kindness which I have always experienced from those interested in gardening wherever I have found them.—D., *Deal*.

THE PORTABLE ORCHARD.

(Continued from page 359.)

FIG. 24 is a common case of a tree sent from a nursery garden. It is a very difficult matter to correct the mischief of



Fig. 24.

early neglect, and in many cases it is quite impossible to make shapely trees of nursery stock. In the present case, by cutting away the branch *p*, we shall obtain a tolerably regular form, having the defect of a rather too long stem between the ground and first tier of branches. Observe, also, that the snags have not been removed in several places; these must be cut off clean, and at once. You may be thankful to procure as good a tree as this at the ordinary price, for gardeners cannot afford, at their ordinary prices, to bestow such pains as I have been advising to do; and, besides, trees must have plenty of free space to enable them to grow well on all sides. I do not complain of gardeners

for selling their ordinary trees at their ordinary prices; but I wish they would grow at least a few first-class trees, and charge a proper remunerative price for them. The danger of removal would be done away with by growing them in perforated pots. The first two or three years of a young tree's life are so important, that the extra cost ought not to weigh with anyone. When this is better known the public will not ask for cheap and nasty trees; and then, I think, gardeners will have more satisfaction in being paid for work that they themselves can look upon with pleasure.

Fig. 25 represents another large pyramidal Pear (Hampden's Bergamot), upwards of 10 feet in height; it was a bought tree,



Fig. 25.

and it gave me great trouble to bring it into its present form. The lowest tier of branches was so badly placed, that the tree was nearly bare on one side. From the engraving it will be seen how this has been remedied by making the branch *r* fork at *r*, and the left-hand shoot of the fork again divide a short distance above *r*. The same difficulty arose in the next tier *v*, and has been met in a similar manner. At *s* are two irregular branches which have been shortened-in and left, because they have some very good fruit spurs on them, but they will be removed next season. The whorl of branches at *t* is a very good one, and had it only been a little lower down it would have been all that could be desired. The stem above this third tier has several small branches on it; these will all be shortened-in, and a fourth tier will be formed at *u* next year. The only fault in this tree is in the position of the branches at *v*; had they been close above *r*, the tree would have been a very fine specimen, but it was too old when I obtained it to correct this defect. As it is, every branch is a complete rope or "cordon" of blossom buds, and it is likely to carry a heavy crop of fruit. It is on

the Quince, which generally does not suit Hampden's Bergamot. —W. KINGSLEY.

(To be continued.)

PLANTS FLOWERING IN MAY.

- | | |
|-------------------------------------|---|
| May 2. <i>Mimulus cupreus</i> | May 24. <i>Ranunculus acris</i> <i>plenus</i> |
| <i>Convallaria majalis</i> | <i>bulbatus</i> |
| <i>Nemophila insignis</i> | <i>Saponaria ocyroides</i> |
| <i>Veronica repens</i> | <i>calabrica</i> |
| <i>Tritoma uaria</i> | <i>Saxifraga Andrewae</i> |
| <i>Ajuga genevensis</i> | <i>umbrosa</i> |
| <i>Alyssum saxatile</i> | <i>Gemum</i> |
| <i>Alchemilla alpina</i> | <i>rotundifolia</i> |
| <i>conjuncta</i> | <i>dentata</i> |
| <i>Anchusa sempervirens</i> | <i>hypocoides</i> |
| <i>Geranium striatum</i> | <i>granulata plena</i> |
| <i>Lychuis diurna plena</i> | <i>Silene pendula</i> |
| <i>Anemone nemorosa plena</i> | <i>rubella</i> |
| <i>Hesperis matronalis</i> | <i>alpestris</i> |
| <i>Leucocymum vernum</i> | <i>Ptilox frondosa</i> |
| <i>Gages lutea</i> | <i>Soldanilla alpina</i> |
| <i>Linaria cymbalaria</i> | <i>Trillium grandiflorum</i> |
| <i>Linum flavum</i> | <i>Trollius europaeus</i> |
| <i>Aquilegia vulgaris</i> | <i>alba</i> |
| <i>Skinneri</i> | <i>Veronica Chamædrys</i> |
| <i>Lotus corniculatus</i> | <i>Vinca herbacea</i> |
| <i>Muscari racemosum</i> | <i>Lausertia bicolor</i> |
| <i>Gentiana verna</i> | <i>Aubrieta deltoide</i> |
| <i>Myosotis palustris</i> | <i>purpurea</i> |
| " 8. <i>Narcissus pulchellus</i> | <i>purpurea variegata</i> |
| <i>Arabis lucida</i> | <i>Campbelli</i> |
| <i>Nepeta violacea</i> | <i>Æsculus Hippocastanum</i> |
| <i>Genista caudicans</i> | <i>flava</i> |
| <i>Daphne pontica</i> | <i>Pavia</i> |
| <i>Phlox setacea</i> | <i>Rose, Monthly China</i> |
| <i>Lobelia speciosa</i> | <i>Gloire de Dijon</i> |
| <i>Asphodelus luteus</i> | <i>Andromeda polifolia</i> |
| <i>Barbarea vulgaris plena</i> | <i>maritima</i> |
| <i>Astragalus monspessulatus</i> | <i>Azalea pontica</i> |
| <i>Asperula odorata</i> | <i>Trichouema Columæ</i> |
| <i>Orchis ustulata</i> | <i>Cotoneaster microphylla</i> |
| <i>Caltha palustris plena</i> | <i>affinis</i> |
| <i>Lithospermum fruticosum</i> | <i>Dodecatheon Meadia</i> |
| <i>Buxus sempervirens</i> | <i>Cheiranthus Marchetti</i> |
| <i>Cerasus Laurocerasus</i> | <i>Crataegus oxyacantha</i> |
| <i>Campanula garganica</i> | <i>Narcissus biflorus</i> |
| <i>Cardamine pratensis plena</i> | <i>Keria japonica</i> |
| <i>Ilex Aquifolium varieties</i> | <i>Cytisus Laburnum</i> |
| <i>Double yellow Wallflower</i> | <i>purpureus</i> |
| <i>Cerastium tomentosum</i> | <i>Iris pumila</i> |
| <i>Coronilla Emerus</i> | <i>Lonicera alpigera</i> |
| <i>Konigs maritima</i> | <i>lutarica</i> |
| " 14. <i>Dielytra spectabilis</i> | <i>iberica</i> |
| <i>Corydalis lutea</i> | <i>villosa</i> |
| <i>sempervirens</i> | <i>Cytisus multiflorus</i> |
| <i>Dodecatheon Meadia 'gi-</i> | <i>Wistaria sinensis</i> |
| <i>gantium</i> | <i>Daphne cneorum</i> |
| <i>Dondia Epipactis</i> | <i>Euonymus europæus</i> |
| <i>Pæonia Moulan</i> | <i>Fagus sylvatica</i> |
| <i>Philadelphus coronarius</i> | <i>Mahonia repens</i> |
| <i>grandiflorus</i> | <i>Cerasus Padus</i> |
| <i>Viola cornuta</i> | <i>serotina</i> |
| <i>lutes</i> | <i>Rhamnus Alaternus</i> |
| <i>Spiræa bella</i> | <i>alpinus</i> |
| <i>laxigata</i> | <i>Rhododendron portianæ</i> |
| <i>Draba aizoides</i> | <i>hirsutum</i> |
| <i>Ornithogalum umbellatum</i> | <i>entawbouse</i> |
| <i>Orobis vernus</i> | <i>Ribes aurum</i> |
| <i>Cytisus scoparius</i> | <i>Cerasus nobilis</i> |
| <i>Phlox verns</i> | <i>Ruscus hypogæorum</i> |
| <i>Convallaria bifolia</i> | <i>Salix amygdalina</i> |
| <i>Pentstemon Scouleri</i> | <i>rosmarinifolia</i> |
| <i>Berberis vulgaris</i> | <i>nigricans</i> |
| <i>Gemum eoccineum</i> | <i>fragilis</i> |
| <i>urbanum</i> | " 20. <i>Staphylea pinnata</i> |
| <i>Prunus domestica plena</i> | <i>Syringa persica</i> |
| <i>Pyrus Sorbus</i> | <i>Emodi</i> |
| <i>Acer Pseudo-platanus</i> | <i>Jasikra</i> |
| <i>Collinsia bicolor</i> | <i>vulgaris, varietal</i> |
| <i>Scilla nutans</i> | <i>Viburnum coccineum</i> |
| <i>Polygala Chamæbuxus</i> | <i>Opulus sterile</i> |
| <i>Platanus occidentalis</i> | <i>Vinca major</i> |
| <i>Quercus robur</i> | <i>minor</i> |
| <i>Pyrus Aria</i> | <i>Viscaria splendens</i> |
| <i>Aucuparia</i> | <i>Oxyura chrysanthemoides</i> |
| <i>Chamaemesspilus</i> | <i>Viola montana</i> |
| <i>Pæonia albiflora</i> | <i>Platystemon californicus</i> |
| <i>lobata</i> | <i>Callicheira platyglossa</i> |
| <i>tenuissima</i> | <i>Scilla non-scripta</i> |
| <i>violacea grandiflora</i> | <i>Ranunculus asiaticus</i> |
| <i>Polemonium caeruleum</i> | <i>Arneria maritima</i> |
| " 24. <i>Ranunculus acotifolius</i> | <i>Antirrhinum majus</i> |
| <i>plenus</i> | |

—M. H., Acklam Hall, Middlesbrough-on-Tees.

CARTER'S SUMMER BROCCOLI.—This is an improvement on all the late Broccolis that I have grown or seen, and will be found a most desirable kind where they are in constant demand. I have some nice heads at the present time (May 29th), which I shall take from the garden to the cellar, that they may last a

fortnight or more longer, so as to bring the late Broccolis and the early Cauliflowers into more continuous succession. This variety is quite distinct in habit and seems hardy. Probably it will prove so from its dwarf and stocky character. I merely state this in the hope that it may lead others to try it.—W. Briggs, *Gardener, Sandfield Park.*

NEW BOOK.

Refugium Botanicum: or Figures and Descriptions from Living Specimens of Little-known or New Plants of Botanical Interest. Edited by W. WILSON SAUNDERS, F.R.S., F.L.S. Part III.

In former notices we have already explained the object and character of this work. The part just issued, which completes the first volume, is a worthy companion to the others; and to many who are fond of hardy shrubs it will have special interest, from the prominence it has given to that beautiful section of the genus *Cotoneaster*, embracing the dwarf small-leaved species, of which *microphylla* is the type. Of these there are no less than seven distinct species figured and described, the greater part of them for the first time. The remainder of the part is devoted to *Cotyledon*, of which seventeen species are figured and described.

We are informed that Part I., vol. 2, of this valuable work is now in the press, and will be published as soon as possible. The whole of this volume will be occupied with *Orchids*—doubtless, with the little gems of Mr. Saunders' collection. The literary part of this volume will be undertaken by Professor Reichenbach. Volume 3 is also in preparation, from which it appears Mr. Saunders does not mean that the work should lag, but that the public should be early in possession of what must to all lovers of interesting plants be a great boon.

NOTES AND GLEANINGS.

THE following prizes are offered for competition at the next meeting of the ROYAL HORTICULTURAL SOCIETY, to be held on Tuesday, June 15th—viz.,—Prizes offered by W. Wilson Saunders, Esq., V.P.R.H.S.—1, Twelve herbaceous plants, in flower, distinct, to be exhibited in pots or boxes, £1 10s., £1, and 10s. Prizes offered by the Society:—2, Twenty-four Pinks, cut blooms, distinct (Nurserymen), £1 5s., £1, and 15s. 3, Twelve Pinks, cut blooms, distinct (Amateurs), 15s., 10s., and 7s. 4, Six *Calceolarias*, distinct, in bloom (Open), £2, £1 10s., and £1. 5, Six Double-flowered Zonal Pelargoniums, three sorts, in bloom (Open), £2, £1 10s., and £1. 6, One double-flowered Zonal Pelargonium, in bloom (Open), 15s., 10s., and 5s.

— THE *souvenirs* presented by the Emperor of Russia to the English delegates to the St. PETERSBURG CONGRESS, are a pair of jasper vases to Dr. Hooker, and a slab of malachite, adapted for a console table, to Dr. Hogg and Mr. Murray respectively.

— THERE is to be a great EXHIBITION OF POMOLOGY AND HORTICULTURE AT TOURNAI from the 12th to the 15th of September next, which promises to be very attractive, if one may judge from the schedule. There are no less than twenty-nine classes for fruit, excluding Pears and Apples; fifteen classes for Pears, and seventeen classes for Apples. We question if there has ever been before in fruit-growing Belgium an exhibition which has drawn together such collections as may be expected on this occasion, which is the celebration of the fiftieth anniversary of the Royal Horticultural and Agricultural Society of Tournai.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of the present showery weather to prick-out young *Celery*, and seedlings of the *Cabbage* tribe in nursery beds, and to transplant the strongest plants of early sowings to their proper places. Plant thickly a good breadth of *Cabbage* in rich ground for early autumn use; also of *Endive* and *Lettuce* for autumn supply. Make a further sowing of *Tur-nips*. Successional sowings of *Spinach* should be made as soon as those earlier put in appear above ground. *Ridge Cucumbers*, *Gourds*, and *Vegetable Marrows* should now be planted out, the former two in the usual way on prepared beds of rich soil, with the temporary protection of hand-lights, the latter in vacant places where proper stations for vigorous growth can be secured.

In preparing the beds for *Ridge Cucumbers*, some pieces of *Mushroom* spawn may be laid on a layer of half-rotten dung a few inches from the surface, and by the time the leaves of the *Cucumbers* have extended themselves over the bed, the *Mushrooms* will appear beneath them, and thus be screened from the heat of the summer sun.

FRUIT GARDEN.

To disbudding wall trees particular attention must now be paid. In carrying it out care must be taken to avoid an indiscriminate application of it; for example, *Peaches* and *Nectarines* when finally disbudded will require to have every shoot removed which is not required for bearing in the following year. *Apricots* and *Plums*, on the contrary, being much disposed to bear on short spurs, will only require to be deprived of their foreright and gross shoots, leaving the rest to grow until they become somewhat firm, when they should be shortened to about an inch from the main stems, taking care, of course, to retain a sufficient number of young shoots to fill-up vacancies and increase the size of the trees. The same rule with slight exceptions according to the sorts will apply to *Cherries*. Keep insects in check by means of heavy syringings, both with tobacco and ordinary water. For mildew dust with flowers of sulphur, just wetting the leaves to make the sulphur adhere to them. Disbud *Fig* trees, retaining no more wood than is required for next season.

FLOWER GARDEN.

Cuttings of *Roses*, when they can be obtained, may now be taken and planted in a close frame in a northern aspect. In about a month they will show a disposition to strike, when they may be taken up carefully, potted, and plunged in a slight bottom heat. Treated thus they make good plants in a short time, and if kept under slight protection during winter will fill their pots with roots and be ready for planting out next May. Pink pipings put in early will soon be ready for transplanting. If the situation ultimately intended for them is vacant, they may be planted there at once, but if occupied at present by something else, let the young Pinks be planted 4 inches apart on reserved beds in an open situation, the soil of which should consist chiefly of light loam, to which may be added some charcoal dust or charred refuse. The rotten manure from an old *Mushroom* bed answers very well for Pinks, as it encourages a mass of fibres, and produces a healthy but not over-gross development of top. As regards bedding plants some notes respecting their arrangement next season should be made as soon as they come well into bloom. Of the flower garden, a rough plan should be made, the beds on which should be numbered and correspond with an accompanying list of plants with which it may be intended to fill them, and along with this should be noted the quantity of plants required for each bed. In this way accurate information is at once obtained of the quantity of plants which must be propagated by cuttings or raised from seed in spring. Disappointment is thus prevented on the one hand, and waste of time and labour on the other. Early bulbs now ripening, if the leaves are turning yellow, should be taken up or the greater portion of the foliage trimmed away. *Verbenas*, *Petunias*, and similar plants should be frequently pegged down when it is requisite to cover the surface of the beds speedily. Fine specimens of *Fuchsias* may be planted out on lawns. Large *Scarlet Pelargoniums* should be well staked. Ten-week Stocks may yet be sown for a display in September and October, and a little late *Mignonette*, also a few of the best annuals for autumn work; but for an early spring display no time is so suitable for sowing annuals as September. *Ranunculuses* will now be generally in bloom. They must, however, be shaded during bright weather to prolong their season. Should any of the foliage wither the roots should immediately be taken up, for it is seldom that this collection is ready for removal at one time, and should rain set in they would certainly start into growth again to their serious detriment.

GREENHOUSE AND CONSERVATORY.

Let shading be used with caution, especially whenever the weather is dull, for as some plants will soon be ripening their young wood, they want as much light and even moderate sunshine as possible. Where *Oranges* and *Camellias* are kept indoors, give abundance of air night and day, wash them frequently with the engine, using clean water, and damp the paths and floors often. *Heaths*, *New Holland* plants, and the like in houses and making their growth, should be duly encouraged by frequent syringings and waterings, and a liberal admission of air. The growth of *Boronias* should be liberally

encouraged, good-shaped plants should be selected in due time, liberal shifts given, a choice situation selected under protection of some kind, such as frames or pits facing the north, or if in other aspects they should be shaded in the warmest part of the day. The luxuriant shoots must be kept pinched back in due time, in order to cause close sturdy growth. Never let any of this pretty family stand in a cold draught, or they will surely wear a rusty brown or spotted, unhealthy appearance. Clean and healthy pots should always be chosen, and they must be particularly well drained, a good portion of charcoal being used with the drainage, and then covering it with rough charcoal. The soil to suit them best is a good rich fibrous leath soil, as gritty as it possibly can be, selected in its natural state from a well-drained situation in suitable weather, and kept in a healthy condition until required for use; it should then be broken up roughly, adding a liberal portion of coarse gritty sand. The potting materials should not be jammed together too firmly, but with a suitable pressing stick, so that the whole mass may form a kindly and natural drainage, readily admitting a circulation of air and water. When the plants are making growth and the pots are full of roots, if it is not intended to repot or shift them, applications of clear manure water will very much improve their health and appearance, but at no other times should liquid manure be applied to this family of plants.

STOVE.

Very little fire heat is now required, although it is advisable to continue a gentle fire in order to give air freely, and to be enabled to continue a humid interior atmosphere, which will greatly encourage a sturdy habit of growth free from canker, mildew, and insects. Of course some attention must be given to shading this house, and watering and syringing. Orchids which are still in a growing state should be placed in the most favourable positions, and encouraged by a suitable temperature for ripening and hardening any growths which they may yet make. In the case of stove plants and Orchids, let every endeavour be made to secure thorough freedom from insects, which about this season are unusually active, and require constant looking after. *Dendrobium nobile* and others of that class sufficiently advanced should also have a moderate and steady temperature, abundance of air, and little water until their stems are ripe and their flower buds formed. Orchids pushed early into growth should be removed forthwith to a cool house, and care taken not to induce them to break again, as a fresh start would interfere with their flowering next year. —W. KEANE.

DOINGS OF THE LAST WEEK.

This has been a very busy week, more especially in the ornamental department. We rearranged the conservatory, corridors, &c., and proceeded as weather would permit in planting the bulk of the flower garden. This day, Saturday, was perhaps the finest day we have had for the latter purpose, as the bright sun warmed and pulverised the ground; but we did but little planting for two reasons—viz., putting the lawn in good order for a particular purpose, and the rising barometer leading us to expect a bright, warm day on Sunday, when fresh-planted subjects could receive but little attention. From press of matter we shall content ourselves with a few words as respects flower-garden routine.

As respects twiggy sticks in flower beds, we have had several letters, some thanking us for the hints given; others telling us that their plants and beds stand very well without such great trouble and labour; others, again, telling us that when not secure without, they prefer pegging-down instead of bushing or twiggling-up. It is quite right that every man should adopt the plan he finds suit him best. We stated that in many sheltered places the plants required nothing in the way of securing. When exposed to strong winds, some mode of securing is essential to the trim form of the beds. Before now we have had fine plants of *Calceolarias* and *Scarlet Pelargoniums* not only bruised and broken, but actually torn up by the roots, and sent careering over the park like so many straws before the fury of the gale. We have a corridor about 10 feet wide, open to the south, with a semi-circular roof covered with sheets of zinc, as securely fastened as possible to iron girders; but so often has this roof been moved, that when we have a very strong south wind, we can only keep it in its place by putting heavy weights upon it. That the labour at first is great in thus securing bedding plants is, of course, quite true; but there is little or no labour afterwards, and

winds and rains will have little power to take them out of their place, so that with us, at least, although we are much longer in getting our work done, we economise future labour after the plants are established. In the meantime the twigs give a partial protection even from cold, help to sift the wind a little, and prevent the plants, when swayed by their own weight, making a hole round the stem, which swaying has always a tendency to rupture some of the best and freshest fibres. Even in sheltered places, if we used no securing twigs, we should be inclined to plant thickly, if we thinned out afterwards, as then the numbers of the plants would keep the wind out more.

As to pegging-down, which some of our correspondents advise, we have no objection whatever, especially when the plants are naturally of a trailing habit, as *Verbenas*, &c., though even in their case, we have had splendid beds by twiggling up instead of pegging down, and in our case, after pegging down, we should not be secure without twiggling afterwards. The finest and the most compact beds of *Verbenas* we ever had were pegged down; and then, as the young shoots pointed upwards, a piece of netting was stretched and fastened securely over the bed, 2 to 3 inches lower than the flowers were expected to reach. The young shoots came through the netting, and the blooms and foliage in part stood above it, the net being wholly concealed; but no wind or storm could destroy the symmetry of the bed. As to pegging down, as a general rule, plants that if left to themselves would grow upright, we consider the plan to be worse than labour lost, and that labour, after all, is expended to produce an appearance contrary to nature. Certainly we have seen neat secure beds, only from 6 to 12 inches in height of such plants as the tall *Ageratum*, *Salvia fulgens*, and *Salvia patens*, in which there was little but the flower stems and upper leaves above the green sward level. As to labour, we would have twiggled up half a score of such beds whilst a man was laying down stem after stem, and these rather brittle, of such strong-growing plants close to the ground, and after all most likely for an effect far inferior to that which would have been produced by allowing the plants to assume their natural proportions. Few things could be more striking than a large circular bed of the tall *Ageratum*, or the red or blue *Salvias* referred to, as they formed with their flower-heads something like two-thirds of a ball, the lower blooms kissing the lawn. All the training and pegging down to a tame flat surface yielded but a poor outline of the massively beautiful, compared with those allowed to assume their natural growth and outline. When dwarf beds are wanted, we think it better to choose dwarf plants, instead of pegging-down what naturally grows tall. Of course, there are cases when, for a defined combination, it will be necessary thus to dwarf the tallest; but the plan should be considered an exception from a generally desirable rule.

Another matter which may be presented to the consideration of the advocates of the pegging-down system, is the greater risk of injury from frost in early planting. What seem to have suffered in the frosty mornings are chiefly some *Scarlet Pelargoniums* that, from being tall enough, had their stems bent a little from the perpendicular, and a few *Verbenas* that were pegged-down as soon as planted, watered, &c. We do not believe they would have suffered in the least if left standing upright before the weather was warmer, and if they had become more used to their new place. Left in their natural position, the leaves and tops defend the stems from free radiation. When the stems are laid slanting, or horizontal, or near the ground, the stems in proportion to their size and juiciness will suffer more than the twigs and leaves. Under such circumstances we have often had stems with their upper sides blackened in May when thus exposed, while those standing upright did not suffer at all. When planting-out early, therefore, even as to plants that we intended to peg-down, we should leave the pegging-down until the weather was safer, and less danger would be experienced by free radiation from the freely-exposed horizontal stems. The easiest way to peg will take time and labour. For amateurs, nothing is better than a quantity of small wire, folded in pieces like hair pins, as they might take the trouble of saving them, and looking after them for another year. We generally use little straight sticks about the size of crow quills, such as the winter prunings of Apples, Pears, and even the summer prunings of these and Currants, cut shortly after this. Bundles of these about 6 inches long are very useful. The piece is taken in your hand, cracked in the middle, which generally leaves a little bit of wood and bark on the lower side, and the two ends are pushed into the ground over the shoot to be kept down. Some hundreds of these straight twigs can

quickly be obtained in most gardens, and, costing little, they are no more thought of after serving their purpose.

Heights of Plants.—We are requested to say a few words on this subject. We have nothing to add except that our readers should consult their own observation, and, if that is deficient, obtain the advice of the more experienced. In anything like a regular flower garden, very much of the effect depends on the relative heights of the plants. Some time ago we were asked to see a regular flower garden looked at from a height of 6 feet above the ground level of the garden, it being sufficient for our purpose to describe the garden as one with a centre, and three concentric rings of various-formed beds round it. The true plan for planting such a garden would be to use plants regular as to height, and then from any point you could see all the arrangement, just as you would look down on the colours of a carpet in a large room. There might be a great difficulty in thus securing the heights, especially without pruning and pegging, and therefore the plants, if not all equal in height, should be arranged so as to have the highest in the centre, or the highest at the outside, and a gradual fall from either point. The beds in the garden referred to were well filled and well bloomed, but it could yield but little satisfaction unless when each bed was examined separately, simply from a total disregard to the height of the plants. We recollect the centre bed was fully 3½ feet in height, and some of the next row of beds were as high, whilst others were not above 18 inches in height; and so, looked at from whatever point, these high beds wholly concealed the low beds from view. The same rule should apply in a border or a single bed, especially when made up of several kinds of plants. In such cases, as a general rule the lowest plants should be next the observer, and all the rest should be presented fully to the eye by rising gradually in height. We recollect seeing in a large and celebrated establishment some fine large beds of three or four colours, but the centre and the outsides were from 9 to 15 inches higher than the different colour between them. There were fully a score of people with note-books in their hands taking down all the particulars, and we could hear such expressions of commendation that we had no doubt that the eccentricity of the arrangement would be at least attempted the following year, and perhaps, if we be as monotonous, a departure of any kind may be prized, however absurd it may appear to others. We had not the slightest doubt then, and we have less now, after having spoken to the planter, that the clever gardener for once miscalculated his heights, and no one was more astonished than himself to find that this eccentric mistake created more attention and was more praised than what he considered his more successful efforts. It is just possible that we may become so oppressively monotonous, so cut and dried with this planting-out in masses, that any departure from the ordinary outline may be considered a decided relief, however contrary it may be to the generally received maxims of taste and refinement. After this somewhat striking eccentricity we heard of some scores, and know of more than a dozen, of large flower beds, where an attempt was made to form the centre and the outsides into hills and ridges and the intermediate spaces into a valley, but, unlike the original mistaken planter, in most cases the valley became worse than a piece of confusion.

It is always well to regulate the height so as to be seen at planting-time. This cannot always be done at first, as the tallest plants when full grown may be the shortest at planting-out time. For instance, in a border of ours, where *Calceolarias* succeed *Pelargoniums*, the latter will be much the taller eventually, but the *Calceolarias*, owing to the moist spring, are the taller now. Of course we are obliged to plant according to the future and not the present heights of the plants; but then the effects at the present are not so good, as the *Calceolarias* are some inches higher than the *Pelargoniums*. It will take a month or six weeks until the latter take their right place, and until that time arrive every inconsiderate passer-by will think the planter has made a mistake. If the right heights were at once secured, it would be better and more pleasing to the eye all through. We have seen beautiful uniform beds in September formed of different materials, and sloping regularly, though not monotonously, from the centre to the verge, and that because the gardener knew what would be the ultimate result; but we looked on these beds as marplots in June and July, and the first part of August, because, though there were lines of plants near the outside from 15 to 18 inches in height, the plants in the centre, from the treatment adopted, were not at first above a few inches in height. In fact, the true design of the planter was never seen until the beds arrived at perfection, just as frosty

nights might be expected. Heights of plants must be studied as to the future, but if they show at once on planting-out, so much the better.

Watering.—"THOUGHTFUL" kindly hints, that our advising the other week giving only a little water to fresh-planted bedding plants is "somewhat a discrepancy from our general rule. Give a thorough watering to reach every root, and then wait until your services are required." To this we say that we adhere to the general rule, but circumstances must ever modify and regulate general rules. Our ground was too cold and wet for our purpose. Hence the using dry fresh soil—hence the using just a little water to settle the roots. We wanted the ground to become warmer, and the more moisture we gave it the longer it would continue cool. We have never used so little water at planting time, even when we arrested cold from evaporation by watering at the roots and covering with the dry soil on the surface. If the plants have flinched at all, it is when a bright day like this has followed a dull drizzly day. We gave a little water to-day to the first-planted beds; but to those recently turned out in vases or beds, instead of drenching the soil, when there was a little appearance of distress in the foliage, we syringed them gently twice a day, and thus arrested evaporation without the trouble of shading. No harm will accrue to damped foliage in bright sunshine out of doors. It is very different from damp foliage in sunshine in a confined atmosphere.—R. F.

COVENT GARDEN MARKET.—JUNE 9.

A FAIR amount of business has been doing during the past week, and average prices maintained. The arrivals of foreign produce are heavy, comprising Cherries, Apricots, and Strawberries; Peas, Dwarf Kidney Beans, Artichokes, Carrots, Turnips, Cauliflowers, and Tomatoes. Excellent Early Ashleaf Potatoes from the Channel Islands are supplied in considerable quantities. Out-door Strawberries commenced to come in this week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons each	5	0	10	0
Apricots doz.	3	0	4	0	Nectarines doz.	10	0	15	0
Cherries lb.	1	0	3	0	Oranges 100	4	0	12	0
Chestnuts bush.	10	0	16	0	Peaches doz.	12	0	24	0
Currants ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black doz.	0	0	0	0	Pine Apples lb.	8	0	12	0
Figs doz.	10	0	15	0	Plums ½ sieve	0	0	0	0
Filberts lb.	0	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	1	6	Raspberries lb.	0	0	0	0
Gooseberries .. quart	0	6	1	0	Strawberries lb.	5	0	8	0
Grapes, Hothouse. lb.	4	0	10	0	Walnuts bush.	10	0	16	0
Lemons 100	6	0	12	0	do. 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	6	0	Leeks bunch	0	4	0	6
Asparagus 100	3	0	6	0	Lettuce score	1	0	1	6
Beans, Kidney .. hd.	1	0	1	6	Musbrooms pottle	1	0	1	6
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	3
Broccoli bundle	0	0	0	0	Onions bushel	10	0	0	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsley sieve	3	0	4	6
Cabbage doz.	1	0	2	0	Paranips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Peas quart	2	0	3	0
Carrots bunch	0	8	1	0	Potatoes bushel	4	6	6	0
Cauliflower doz.	4	0	8	0	Kidney ditto	4	0	7	0
Celery bundle	1	6	2	0	Radishes doz. bunches	1	0	0	0
Cucumbers each	0	6	1	6	Rhubarb bundle	0	4	0	6
Endive doz.	2	0	0	0	Shallots lb.	0	0	1	6
Fennel bunch	0	3	0	0	Spinach bushel	2	0	3	0
Garlic lb.	0	8	0	0	Tomatoes doz.	2	0	3	0
Herbs bunch	0	3	0	0	Turnips bunch	0	8	1	0
Horseradish .. bundle	3	0	5	0	Veget. Marrows .. doz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, London, S.W.—*Catalogue of New and Beautiful Plants for 1899.—List of Select Softwooded and Bedding Plants, &c.*

TO CORRESPONDENTS.

"We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

BIRD CHERRY AS A STOCK FOR THE PEACH (*Burdley*).—The Rev. W. Kingsley, South Kilvington, Thirsk, has used the *Prunus Padus* as a stock for *Peschee* with much success. It has been noticed in the columns of this Journal.

CLOCHES (*H. Seymour*).—These bell-glasses will suit you exactly for protecting Cauliflower plants and raising cuttings. Retail they are only 1s. 6d., and where a dozen or more are taken, Messrs. Phillips & Co. allow a discount. They can be stored within one another when not required.

VARIETATED ZONAL PELARGONIUMS (*An Aberdeenshire Gardener*).—We think that the essays will not be published in a separate form.

GUANO WATER (*M. G.*).—One ounce of guano to two gallons of water may be used to all the vegetables you mention. Do not pour it over the leaves.

CALCEOLARIA FLOWERS (*W. A. O.*).—It is not common for the Calceolaria to produce elongated, almost tubular flowers, yet we have noticed the occurrence more than once before.

CEPHALOTUS FOLLICULARIS TREATMENT (*An Old Subscriber*).—Half fill the pot with crocks, and use a compost of equal parts of chopped sphagnum and turfy peat full of white sand, with a third part of charcoal, in pieces from the size of a pea to that of a walnut, and crocks, well mixing the whole. Introduce the plant, and raise the compost in a cone slightly higher than the pot rim. If the plant is small the pot may be placed in one of larger size, filling the space between the sides of the two pots with crocks up to within an inch of the top, then put in a little moss, and fill level with the rim with sand. The soil in the pot may be surfaced with fresh moss, taking care not to bury the plant too deeply. The plant should be covered with a bell-glass with one or more holes in the top, according to size, and fitting exactly within the rim of the pot; or if the latter be placed in a larger pot, the glass should rest on the sand between the two. The pot may be set in a saucer kept full of water. Sprinkle the plant with water every morning through a fine rose, and wipe out the glass. The plant succeeds in a winter temperature of from 45° to 50°, and in summer in one of from 60° to 75° or 90° from sun heat.

REMOVING VINE SHOOTS (*Idem*).—You may remove all the shoots except one, if the Vines are strong, and that showing fruit best should be retained, rubbing or cutting the others off closely; but if the Vines are weak leave two of the strongest shoots on each spur, cutting away the fruit from one. Allow but one bunch on each spur, and with the larger foliage you will keep up a better root action. The shoots left should be kept as near the main stem or as possible. One of these shoots should be cut off quite closely in December, and the other shortened-in to two eyes.

PLANTS INFESTED WITH INSECTS (*G. M.*).—The black dust adhering to the leaf enclosed to us is caused by some insect, but what we are unable to say, though we think it attributable to some species of spider. The brown scales on the twig are the brown scale insect, and a worse case we have not seen. The scale may be destroyed by syringing the plants with a solution of 3 ozs. of soft soap to the gallon of water, using it at a temperature of 140°. The best plan, however, is to dress the plants when at rest with a solution of soft soap, at the rate of 4 ozs. to the gallon of water, using a brush. Rub it well into the crevices, taking care not to dislocate the buds. Fowler's Insecticide, Gishurst Compound, and Clarke's Compound are also good for freeing plants of this pest.

VINE LEAVES SCORCHED (*Idem*).—The leaf is badly scorched. The evil is caused by not giving air early, so as to have the leaves dry before the sun shines powerfully upon them; or it may arise from their being too near the glass. The shoots should be trained to wires 16 inches from the glass.

TRAINING A VINE (*One Fond of Grape Culture*).—"You have done quite right, according to fancy, in converting the Sweetwater Grape Vine from the spur into the long-rod system. It will do perfectly, will become longer-lived, and produce finer Grapes in consequence. You will meet with every information that I think can be desired, as regards out-of-door Grape culture, in my articles just appearing in THE JOURNAL OF HORTICULTURE. The Vine cannot be 'killed' by overbearing, nor can the trainer go wrong on the system I pointed out.—UPWARDS AND ONWARDS."

GROUND VINERY (*S. C.*).—It had better face the south, and be protected from the north and east winds, but not overshadowed. The Black Hamburgh is the variety to be preferred. If you buy a Vine in a pot, and do not disturb the roots, you may plant it under the vinery at any time.

GRAPES CRACKING (*F. W. Gee*).—If your Vine is very old it would not be desirable to raise the roots and replant, but meantime it would be well to examine the soil beneath the gravel, and only use liquid manure, or liquid of any kind, if the soil is dry. Dissolved bones would be as good as any, about 7 lbs. to thirty-six gallons of water, and less the next barrel. But for the gravel, you might give a top-dressing. The Vine would be benefited by moving the gravel, then taking away as much of the old soil as you could safely in autumn, and replacing with fresh rich compost, and a thin coat of gravel on the surface, if you must have it. We do not discover signs of mildew on the berries, but they were much shrivelled. We rather fancy they are blotched or scalded with hot moist air, owing to not giving air early enough. Berries will crack from too moist an atmosphere and a want of root action, but we think your cracks have been made by the Grape scissors pricking the berries when young. (*G. F.*)—Grapes frequently crack in the berry when there is too much moisture at the roots, and a close, moist atmosphere maintained inside the house. In the latter case more air and a dry atmosphere are necessary; and for some kinds more liable to cracking, covering the border outside with glass ashes saved them from the evil.

VINERY (*West Oxford*).—As to the plans of the vinery, No. 1 and No. 2, we should be glad to have either. With the wall to build No. 2 would be the cheaper at first. In a cold place No. 1 will be better, as the glass hip of No. 2 will cause more firing if forcing is to be used. There is nothing against your double flue through the house and returning by the back wall; but sometimes they do not draw equally without a little care, and, unless you force early, the single flue would do. With eight Vines in a length of 25 feet, you may save yourself all trouble about the back wall, as nothing will flourish there after the Vines are established and cover the roof. At first Peaches and Fig trees in pots would do very well. The whole might be shelved from top to near the bottom for Strawberries and Dwarf Kidney Beans, and they would do well until the Vines shaded them. The shelves would keep many plants in winter, if deemed necessary. With from five to six Vines in the house, Peaches would do pretty well on the back wall, and in such case a border should be made for them.

MULBERRY BLOSSOM (*H. G. M.*).—In the Mulberry, the long drooping catkins are the male flowers, and some of those sent show the stamens. Small oval, upright masses are the females, and we incline to think that

the small ones sent are so, as we thought we could distinguish the beaked or turnover stigma. The flower receptacles being on different trees would not militate against this idea, as the Mulberry is both monoecious and dioecious. The small masses were rather much pressed to enable us to be sure. If, contrary to the above, both the long and short masses are males, then most likely the long catkins belong to *Morus nigra*, and the short one to *Morus tatarica*, or some one of that kind. A general rule is, that the males are long and pendulous, and the female masses short, oval, close to the shoot, and upright.

GOOSEBERRY CATERPILLARS (*J. H. W.*).—Dust them with fresh White Hellebore powder. Syringe the berries thoroughly afterwards.

POTATOES (*J. N. C.*).—Do not earth them up at all. Earthing-up retards the maturing of the crop a fortnight, and, consequently, renders it more liable to the disease. The Potatoes are as test that can be taken up at the end of July.

VALUING GARDEN CROPS (*W. W.*).—We know of no rule for valuing growing crops in a kitchen garden; but they would be more valuable to the incoming tenant than anyone else. It would be easy to obtain a fair estimate for outlay, labour, &c.; but the best plan of all would be for your employer to appoint a gardener or a nurseryman in the neighbourhood, and the outgoing tenant to employ another. Their award would be more satisfactory than one made by you, as your employer's servant. A garden, for instance, with plenty of vegetables near a town, would be more valuable than a similar garden where the produce would be of little value if it could not be used there.

CONSERVATORY ARRANGEMENTS (*R. T.*).—We approve of the proposed arrangements. Two rows of pipes round the conservatory would do, if you would be satisfied with from 45° in winter. If not, you must have more. There is no reason for raising a pipe above the front border near the glass. Heat will ascend. You will have in your other houses ample heating power for anything, even if the water in the pipes is rarely above from 150° to 160°. Much comfort and success depend on never having the water in the pipes very hot. You will easily maintain a temperature of from 65° to 70°, if desirable, in cold weather. Cool-house Orchids could be grown in the vinery and conservatory, and even Orchids that required a high temperature if you forced one vinery early.

APPLYING SOAPSUDS (*O. C. G.*).—You may apply soapsuds and chamber slops to kitchen garden crops, pouring them in between the rows of Cauliflowers, to Peas, Scarlet Runners, Kidney Beans, and Celery, but not undiluted, for if strong the liquid will injure, and in time destroy the roots of the plants. Three times the bulk of water should be added to the slops and soapsuds, and then you may safely apply the mixture to all the plants you name, except the Pelargoniums and the Vine border, giving it copiously and not in dribbles, and during dry weather. It is also good for Asparagus and Sea-kale.

CUCUMBERS ULCERED (*A Subscriber*).—The cracking of the footstalk and consequent ulceration, are due to the great vigour of the plants, and may be occasioned by the soil being too rich or too wet. There is no remedy but to give the plants more room, letting them spread, and confining stopping to pinching-out the points of the shoots one joint beyond the fruit, keeping rather dry at the root, but not so much so as to cause the foliage to flag. Any leaves ulcered should be removed, and if the disease appear on the stems remove them close to where they originate. Admit air freely and early in the morning, shutting up early in the afternoon.

CUCUMBERS NOT SWELLING (*J. H. C.*).—We cannot account for the fruit not swelling, as you say the heat is good top and bottom, and the plants are stopped one joint beyond the fruit, the shoots not too close together, air given, water applied carefully, and everything done to insure success. We conclude from your statement that there is no fault in the treatment, therefore we advise you to cut away all the old shoots that had the fruit formed upon them two months ago, and leave some of the best young shoots, training them over the bed at from 9 to 12 inches apart; stop these shoots one joint beyond the fruit—that is, if they show fruit before they are within 9 inches of the side of the frame; but if not, stop them at that, and keep them stopped to one joint beyond the fruit; or, if no fruit show, stop them at the second or third leaf. Water so as to keep the soil moist, but do not saturate it by heavy watering. Admit air early in the morning, and shut up early in the afternoon, giving a sprinkling of water overhead before doing so. A good Cucumber for the roof of a cool vinery is Stockwood Ridge; but if you keep the house tolerably warm it is likely that Telegraph would succeed, and it is one of the best Cucumbers.

CUCUMBERS FAILING (*An Amateur*).—We think your plants have not sufficient heat. Thin out the shoots, not allowing them to become too crowded, encouraging the young growths, and cutting out the old shoots, stopping the young shoots one joint beyond the fruit, or, if they do not show fruit, stop them at 9 inches from the side of the frame. If there is not enough of shoots, they may be stopped at the third or fourth joint, so as to induce the production of shoots for furnishing the bed at from 9 to 12 inches apart. Except in very hot weather no shading is necessary—indeed, we never shade Cucumbers, unless when newly planted, or after a period of dull weather, and only then with an old thin mat during the hottest part of the day. You can hardly give too much air if you maintain the proper temperature; admit the air early in the day, and shut up early in the afternoon. Do not overwater, but give enough to keep the soil moist and prevent the leaves flagging.

CUCUMBER DISEASE (*W. S. D.*).—We can offer you no remedy. See what Mr. Fish says at page 313.

CAMELLIAS INFESTED WITH APHIDS (*Amateur*).—It is difficult to tell the cause of your Camellias being attacked with insects. You may destroy the aphides by syringing them with tobacco water, that of the shops or from the tobacco manufacturers being diluted with six times its volume of water; or it may be made by boiling 2 ozs. of shag tobacco in a gallon of water for five minutes, covering up until cool; then strain, adding sufficient water to make three gallons. This may be syringed over the plants, or the shoots infested dipped in it, which is a more economical plan, and even more effectual.

STRAWBERRIES FOR LIGHT SOIL (*A. B. C.*).—It is of little use attempting Strawberry culture on light soils, unless the ground be deeply trenched, and the soil well enriched with cool manure, cow dung being best. The manure should be put in the bottom of the trenches, and mixed generally through the soil, and top-dressings of rich compost, as loam

from turf mixed with an equal quantity of cow dung, should be given in October. The spaces around the plants should also be mulched in spring or early in summer with littery manure, well watering in dry weather after the plants come into flower, continuing to water until the fruit is gathered. Trollope's Victoria, as you say, is one of the best varieties for light soils; Black Prince, Rifleman, Sir Charles Napier, and Rivers's Eliza, are also good; Marguerite does well, and so do Alpines with plenty of water. Strawberries of the Pine race, as a rule, do not succeed well on light soils, being very subject to canker, and too weak in growth to swell their fruit properly.

GLADIOLI BULBS (*T. Grafton*).—The young bulbs form upon the ones of last year, and it is the young that grow in the following year, and not the old, for once a bulb has grown and flowered it is of no further use; but the young bulb, with its offsets, is a continuation of the old. It is incorrect to say that a bulb of 1837 will grow in 1839, though it certainly does so by the formation, during its year of growth, of bulbs and offsets that will flower in the succeeding years.

MOUNTAIN ASH TREATMENT (*Idem*).—The sprig and bloom enclosed to us are those of *Pyrus Aucuparia*, or Mountain Ash, a fine ornamental tree of medium size, very pretty and sweet when in flower, and highly ornamental in autumn with its fine red berries. It is raised from seed, and plants can be had by the hundred or thousand of any nurseryman at a cheap rate. It succeeds in almost all soils and situations, being best when planted on the margins of woods and plantations, or where desired for ornamental purposes. It is a native of this country, is plentiful in mountainous parts, and is, therefore, very hardy. So far from the fruit being poisonous, it is eaten in some parts of Scotland and Wales.

BELLADONNA AND JACOBÆA LILY COMPOST (*Tyro*).—Both succeed in a compost of three parts turf loam, neither heavy nor light, and one part leaf mould or old cow dung. Do not give them very large pots—indeed, keep them under rather than overpotted. The Belladonna should be constantly kept on a light shelf in the greenhouse. Set the pots on a pan full of sand, which at no time ought to become dry, not even in summer when the plant is dormant. Do not repot them until the roots split the pots. The plants will begin to grow in autumn, when they should be well supplied with water, continuing to give it until the foliage begin to decay, then cease watering. The Jacobæa Lily should be kept on a shelf in the greenhouse, and treated in a similar manner, but the season of growth is different. The Jacobæa Lily begins to grow early in spring, and flowers in June or July, or earlier. It should be well supplied with water from the commencement until the completion of its growth; then withhold water altogether, keeping it dry in winter, but the pot should be set on a pan of wet sand, for nothing is more injurious than to keep these plants too dry during their period of rest.

GREENHOUSE PLANTS TO BLOOM FROM NOVEMBER TO MARCH (*D. J.*).—*Acacia armata*, *A. Drummondii*, *A. oleifolia elegans*, *A. longiflora magnifica*; *Boronia Drummondii*; *Bonvardias Brilliant*, *Hogarth*, *Humboldtii*, and *Leiantha floribunda*; *Citrus japonica*, *Coronilla glauca*; *Correas Brilliant* and *sociosa major*; *Cyclamen Atkinsi*, *C. com.* and *C. persicum* varieties; *Cypripedium insigne*, *Cyrtus Alceanae*, *C. racemosus*, *Daphne Fortunei*; *Epiphyllum truncatum elegans*, *violaceum*, *multiflorum*, *Ruckerianum*, and *Russellianum*; *Habrothamnus elegans*, *Hovea Celisi*, *Linum trigynum*, *Luculia gratissima*, *Monochetum ensiferum*, *Primula sinensis*, double varieties; and *Rhododendron jasminiflorum*, *k. javani-*

cum, *Princess Alice*, *Princess Royal*, and *Princess of Wales*. In addition to the above, there are *Chrysanthemums*, *Primulas*, *Cinerarias*, *Tree Carnations*, *Violets*, *Dielytra spectabilis*, *Prunus sinensis flore-pleno*, *Deutzia gracilis*, *Camellias*, and *Azaleas*.

TOP-DRESSING AZALEAS AND CAMELLIAS (*T. C. F.*).—You may top-dress the plants with old cow dung, and that will to some extent lessen the necessity for shifting into larger pots; but this must not be neglected, though it need not be done oftener than every second or third year after the plants are as large as you wish. The other manures you name are not suitable for either Azaleas or Camellias.

CUTTING ROSE BLOOMS (*An Amateur*).—In cutting Rose blooms for the coat or nosegay, no more of the shoot should be removed than will give a sufficient length of stalk or stem to the bloom, whilst leaving 2 or 3 more leaves or joints from the last pruning. The more there is left the better.

RHODODENDRONS (*The Root*).—They are unnamed varieties of no superiority, and sold in mixtures by nurserymen at various prices per hundred.

GRUBS (*H. S. A.*).—The grub you enclosed is a larva of the Cockchafer, and the other grub which you mention is probably that of the Daddy-longlegs. You will see what we said at page 879 of our last number. Prevention is better than cure, and destroying the parents is more easy than destroying their progeny. (*F. J.*).—The grubs which are eating the roots of your Perillas are the larvae of the Daddy-longlegs, or Crane Fly, *Tipula oleracea*. You will see what we have said above. In your case we advise you to have the earth stirred with a knife, and examined thoroughly round the roots of all the Perilla plants; the marauders might be found and destroyed.

INSECTS (*G. S.*).—The objects on your Pear leaves, which you mistake for chrysalids, are the moveable cases made by the caterpillars of a small moth, belonging to the genus *Astyages*, or *Coleophora* (*A. hemerobiella*). The caterpillars, except where very numerous, will hardly prove injurious to the trees. (*F. F.*).—The grub which you sent, and which had burrowed down the centre of your Rose shoot, was so completely smashed in the post, that we are unable to determine whether it be that of a Sawfly, which is most probable, or of some moth. The only remedy is to pick off and burn the drooping shoots.—*W.*

NAME OF FRUIT (*Rheola*).—Your Apple is the Baddow Pippin, known also as the Spring Ribston.

NAMES OF PLANTS (*Annie Heyton*).—1, *Alyssum saxatile*; 2, *Saxifraga granulata* fl.-pl.; 3, *Arctostaphylos Uva-ursi*; No. 2 not recognised, send again. (*Mary Knowles*).—2, *Deutzia scabra*. (*X. B.*).—*Lamium maculatum*. (*Snellgrove*).—1, *Stellaria holostea*; 2, *Polygala vulgaris*; 3, *Pedicularis sylvatica*; 4, *Potentilla Tormentilla*; 5, apparently *Rhinanthus crista-galli*; 6, *Lamium album*. (*A Working Man*).—1, *Philadelphus grandiflorus*; 2, *Polygonatum officinale*; 3, *Anemone sempervirens*; 4, *Centauria montana*. (*Eastbourne*).—1, *Nicotiana longiflora*; 2, *Salsola Krassiana*, the *S. hortensis* of gardens; 4, *Cystopteris fragilis*. (*Five-years Subscriber*).—1, *Pteris serrulata*; 2, *Polystichum angolare*; 5, *Cystopteris fragilis*; 6, *Pellaea cordifolia*; 7, *Selaginella Krassiana*; 8, *Pteris cretica*; 12, probably *Cincinnatia flavens*. (*W. C.*).—*Muscari comosum*. (*E. E. Bangor*).—*Chianthus panicens*, or *Crimson Glory-Pea*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 8th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	3 ft. dp.			
Wed... 2	30.147	29.987	71	51	58	53	S.W.	.10	Fine, but cloudy; overcast; densely overcast; mild.
Thurs. 3	29.975	29.917	69	46	58	54	N.W.	.09	Densely overcast; overcast, brisk wind; fine at night.
Fri.... 4	29.958	29.856	62	43	59	55	S.W.	.00	Overcast, fine; overcast, brisk wind; densely overcast.
Sat.... 5	30.132	30.029	73	40	59	55	S.W.	.03	Fine; very fine; clear and fine at night.
Sun... 6	30.183	30.165	83	50	63	58	S.	.00	Very fine; exceedingly fine; very fine, hot air.
Mon... 7	30.147	30.043	88	49	65	58	S.	.00	Very fine; exceedingly fine and hot; clear and very fine.
Tues... 8	30.194	30.108	74	42	65	60	N.	.00	Overcast; very fine, brisk wind; clear and fine.
Mean..	30.104	30.016	74.29	45.86	61.00	55.86	...	0.10	

POULTRY, BEE, AND PIGEON CHRONICLE.

FOWLS EATING FEATHERS.

SINCE this subject was first mentioned in your columns, several correspondents have made useful suggestions in relation to it, which are all in certain cases of more or less effect; but they all seem to have fallen into the error (how common it is in all the affairs of life!) of supposing their experience and their remedy correct in every other case. Thus, one says, Give the fowls meat; while another traces all cases to the use of animal food. Both are right, and both may be wrong. Feather-eating does not always arise from the same cause, and in speaking of one or two causes which I have proved to produce it in my own case, I by no means assert there are no others, but simply add my small contribution to the general store.

One of your correspondents says that Brahmas have no such bad habits. Now I keep at present Dark Brahmas only, having to keep three breeding pens, and rear what number of chickens I can in a town garden 70 by 35 feet; and on several occasions I have been heavily visited by the nuisance in question—for a nuisance it is. On one occasion the hens attacked the feathers

on each other's and the cock's legs, and the consequence was that some very good birds have been utterly ruined for exhibition during the whole season, being literally reduced to "running over bare poles." On the last occasion the cock's neck hackle was the part attacked; but I had by this time discovered the cause, and checked the mischief soon, though my best cock was considerably spoiled for a recent show. In all these cases the exciting cause was thirst. The pen had been left for a few hours in warm weather without water, and the attack in question was the consequence. I proved this to be the fact by several experiments. I removed the fountain from its usual place to a less conspicuous one, and in a few hours I found the hens at their old game. I took away the fountain from another pen never previously guilty of the vice; in this case they did not touch the feathers, but attacked the cock's comb and wattles, which they would have soon reduced to a mass of gore, but having discovered what I wanted, I restored the missing necessary of life, and all was well. I may also recall a case not long ago, in which the pullets of Mr. Lane, the well-known Spanish breeder, devoured the ear-lobes of the Birmingham cup cockerel, when shown with them at Manchester. In this case also I feel sure thirst was the exciting cause, and while many may think that their birds can never suffer from such a trivial reason, I

feel sure that it does occur in every yard occasionally, for the quantity fowls drink in hot weather is beyond what any one could conceive—my birds in summer dispose of three gallons per day.

When the attack arises from this cause, if discovered at an early period no treatment will be necessary; but if the thirst has been excessive, considerable fever or other constitutional disturbance may have been excited, and if the hens, therefore, still continue to attack each other or the cock, mild alkaline correctives should be administered. One of the best is bicarbonate of potash, in sufficient quantity to make the water slightly alkaline, given in the water they drink, each alternate day only, for two or three times. I had the shanks of one pen bleeding for nearly a week on one occasion. In very severe cases aperients should be exhibited, and the birds carefully dieted till their health appears perfectly restored.

None of my fowls ever have meat, and, in some such cases when the other food is not selected with judgment, it is undoubtedly correct that the want of it causes cannibalism. In this case, as one of your correspondents says, boiled liver is a sure remedy; no other animal food, not even paunch, is nearly so good, the liver having a laxative effect which in itself tends towards a cure. That too much meat, on the other hand, will cause the same evil, is a fact almost every breeder knows.

In some other cases which have baffled every other curative means, I have known the administration of chopped or crushed raw bones to stop the evil. I was indebted to Mr. F. Crook for the first knowledge of this, and for a long time was much puzzled to account for its occasional success, where meat alone had failed. But on reflection, I am inclined to think the various component parts of the bones to some extent supply the place of small mollusks, of which fowls are inordinately fond, and of which they get a plentiful supply when at liberty. It is only a conjecture, but I can suggest no other reason; and the quill of a feather and bone have certainly much in common. The bones should be smashed or crushed as small as peas, when the fowls will eat them greedily, and if given in moderation this food will not only improve their laying, but add to the gloss and hardness of feather.

A great preventive of this vice is to give soft food, having a laxative tendency, and the best is white oats ground coarsely so as not altogether to destroy the husk. This will keep the bowels in order, and as in human beings, so in fowls, this is the great means of keeping off depraved appetites of any kind. But what I would chiefly insist on is, that no one treatment is suited to every instance, and the puzzled owner should tax his reflection to discover, if he can, what is the probable cause in his own particular case. After all, there are cases which baffle every attempt at cure, and which, I believe, are due to some mysterious disturbance of the female system, such as is occasionally met with in other classes of animals, and which in poultry has never, I believe, been investigated. I have often seen indications of this, and once knew a hen eat her own chicken just hatched! In the latter case it will be at once remarked that the cause may again have been excessive thirst; and in fact, the whole class of cases occasioned in this way, especially when compared with my experimental case, in which the cock's head was attacked, and Mr. Lane's, bear a striking analogy to the frequent cannibalism of doe Rabbits, which it is well known can be checked by giving them water during the period of sneaking.

However caused, there can be no doubt the vice often becomes a habit, and though restored to perfect health the bird continues to practise it as such. Some such cases are incurable; in others the remedies have been already pointed out by previous correspondents—viz., separating the offender for a time, and smearing the sufferer with some nauseous composition, of which aloes is best on account of its strong purgative nature, which considerably disorders the offender's stomach, and thereby tends to wean her of her objectionable fancy.

I wish again to say, I do not pretend to have pointed out the cause and cure in all cases. I have simply stated what I know, and by experience have proved; and I feel convinced that if others would do the same we should soon get to the bottom of this matter, the most puzzling, I think, in the whole range of poultry-keeping.—NEMO.

IPSWICH POULTRY SHOW.—We wish to call attention to the very liberal prize list issued by the Ipswich Poultry Society for their next Exhibition, which is to be held in connection with the Suffolk Great Agricultural Show. We understand there is a great falling-off in the applications for prize lists, but we hope

exhibitors will yet send in their entries, and thus uphold what we believe to be one of the best managed provincial exhibitions.

RAILWAY CHARGES.

It will be in the recollection of those who were interested in the abortive attempt made some years ago to lessen the charges made by railway companies, that there was a surplus after paying the expenses of such appeal. On taking counsel with our good treasurer to the fund, he recommended my dealing with it as I thought best myself, without a consultation with the various subscribers, which was indeed impossible. A treasurer with a surplus is like a Chancellor of the Exchequer with a surplus, and "What will he do with it?" is a question that those interested are disposed to ask, and anxious themselves to provide an answer for. This would have been an insurmountable difficulty. I have, therefore, determined as the course most likely to give general satisfaction, to present in the names of the subscribers the said amount, about £8, to the Committee of the Birmingham Show, and to add it to the extra prizes for single cocks. I may now state that the offer had been very gratefully accepted by that Committee, and that it has been thus apportioned:—Grey Dorking cocks, £2; Dark Brahma ditto, £2; Duckwing Game ditto, £2; Poland cock, £1; Any other variety class, £1.

I hope this arrangement, though not exactly that which we hoped might be the termination of our unsuccessful efforts, will be satisfactory.—JOSEPH HINTON, *Warminster, Wilts, formerly of Hinton, near Bath.*

TAILS OF COCHIN-CHINA AND BRAHMA POOTRA COCKS.

Much has been written at various times respecting the trimmed hocks of Cochins and Brahmas. There has recently appeared to me something new, that should be equally condemned, in the preparation of the tails of some Cochins lately exhibited. I have been a breeder and successful exhibitor for many years, but have personally attended few shows; however, at an exhibition I lately visited I saw Cochins whose tails had evidently been under the influence of the curling-iron, care having been previously taken to remove those stubborn feathers that would not yield to such influences. By such means a beautiful but unnatural tail was produced. If birds so prepared are passed by our most eminent judges and prizes awarded to them, there will be but little chance for exhibitors who show their birds in a perfectly natural state being successful. I hope judges will in future pay more attention to this most important point, and not be satisfied with the appearance of birds in a pen, but by a thorough examination see that all natural feathers in the tail and wings are present, after making due allowance for any broken or moulded feather.—EXHIBITOR, *Scarborough.*

LIABILITY OF RAILWAY PROPRIETORS FOR BIRDS LOST BY THEM.

I HAVE just succeeded in obtaining from the London and North-Western Railway Company, through the County Court, the sum of £5 5s., the value of a Satinette Pigeon lost in transit between Birmingham and Birkenhead, in spite of their bye-law, which states they will not be responsible for loss of fowls beyond a certain value, except the amount is stated at the time of booking, and 5 per cent. insurance paid on that amount. Perhaps to some of your readers the above information may be valuable, as they will then know the risk they are at in sending valuable birds by rail. I should not object to pay a small premium, but when sending birds to a show, say worth £50, to pay £2 10s. as insurance is no joke.—FRANK GRAHAM, *107, Sandon Terrace, Birkenhead.*

FAILURES IN DRIVING.

I HAVE two old stocks of bees which I am desirous of changing to Woodbury hives, and I have made one attempt to do so by driving, but I found the bees were very obstinate, and only a portion would leave the combs after being inverted, and rapping being continued nearly half an hour. I therefore drove them back again, for I did not see how I could remove the combs, &c., without destroying many of the bees. Will you be kind enough to inform me whether the fumes of the prepared fungus used for fumigating will injure the younger bees, or any

part of the brood, if I adopt that plan? There are many drones in both hives, but no signs whatever of swarming. I have also one stock of Ligurians in a Woodbury hive which seems very strong, but they have not begun to hang out yet. Is it, therefore, desirable to wait for those signs before taking an artificial swarm? And thirdly, by placing the super on now, would that prevent their natural swarming, or impair the swarm by delaying it until the super is filled or removed? My main object with the Ligurians is swarms, not honey; but as they will gather honey as well as breed, it seems very desirable to give them ample space for both purposes, without which they must do one thing at the expense of the other.—NOVICE.

[We can only advise you to "try again." It is certain that when once you have by practice acquired the knack of "driving," almost any stock which you may choose to attack will speedily succumb. Still even this rule, like almost every other referring to bees, is not entirely without exception, as is proved by the following incident which was recently related to us by a gentleman who had resided in Germany for some years:—At one of the great annual meetings of German bee-keepers it was thought desirable to afford such novices as might be present a practical lesson in the art of "driving," and to this end an inhabited hive was produced, inverted, and drummed upon in the orthodox manner. To the dismay of the operator the bees refused to budge, nor would they succumb even to the united efforts of all the great "bee-fathers" then present, who tried their hands one after the other only to retire in confusion. What was now to be done? It would never do to allow the bees to remain masters of the field. So the hive was finally cut to pieces, the combs extracted, and in this way were the poor bees ultimately dislodged from the fortalice which they had so long and so triumphantly held against all comers. Had the assembly acted upon the advice given by Mr. A. Pettigrew in page 256 of our 15th volume, and poured half a pound of simple syrup over the bees a quarter of an hour before the operation, the result would probably have been different and more edifying to the rising generation of Teutonic bee-keepers.

We do not know whether fungus smoke affects the brood, but we believe that stupefaction by its means is injurious to the bees themselves.

Your Ligurians in a Woodbury hive may well be strong enough to afford a swarm, although they have not yet "hung out." We should open the hive, look over the combs, and judge for ourselves. If you want swarms and mean to obtain them artificially, a super will only be in the way.]

RAPID INCREASE OF LIGURIANS.

On returning home at the end of May, I found that a stock of Ligurians which I had from Mr. Woodbury had thrown off its fourth swarm this year—all good large swarms, and all taken satisfactorily! Is this not very unusual?—E. W.

[Four large swarms from one stock during May are an unusually early and rapid rate of increase. We fancy the stock must have over-swarmed itself, and that it would have been better to have returned the last. The season is, however, so little advanced that it may probably recuperate itself before winter.]

SUPERS.

THE bees in one of my best supered Woodbury hives after working fairly in the super, one-third filling it, swarmed yesterday. Will you say whether you think it owing to my having used some drone comb for guide comb in the super? I have used some rather fine pieces, and believing to have read somewhere that it is not good for supers, I shall be much obliged by early opinions from you.—A. B.

[We do not think the use of drone guide-comb had anything to do with the issue of the swarm. It is usually eschewed in supers because drone honeycomb is not so valuable for table purposes. Had it been our own case we should at once have looked over the hive, removed the young queen, excised all royal cells, and returned the swarm.]

FOUL BROOD.

I beg to thank you for your advice as to getting rid of the wax moth, and to tell you your conjecture that the colony was suffering from foul brood was correct; for on examining the combs, several of them were found to be in a dreadful state,

the cells full of a substance resembling thick cream, and of about the same colour. As to the history of the stock, it was purchased by my employer last October, of Messrs. Neighbour and Sons, to whom it has since been returned. It appeared to be strong and flourishing all the winter; it stood in a beehouse with some black bees in common straw hives. Do you think it likely they will be infected by it? They appear to be strong and flourishing at present. One of them threw off a strong swarm on the 10th of May, and the last on the 23rd, both of which appear to be doing well.—S. S., Ware.

[If this be really foul brood, it is very possible that it may have communicated the infection to one or more of your other stocks.]

OUR LETTER BOX.

TOULOUSE GEESSE (*Three-years Subscriber*).—Toulouse Geese are very hardy, they are early layers, and lay large numbers of eggs. They do not sit.

HAMBURGH FOWLS (*T. M. L.*).—No. 3 of your poultry alone appears in health; she will, doubtless, lay again directly, if she has not done so for the last two months. It may be she lays now, but that her eggs are eaten by herself or by some other. No. 1 is suffering from chronic cramp, and will die. Nos. 2 are suffering from the same in an early stage, or from eating poisonous food. If they roost in a house with a brick, wooden, or stone floor, that is the cause. Remove it, or cover it at least 6 inches deep with dry earth, gravel, or grit.

HEN DYING SUDDENLY (*M. K., Earlswood*).—Tar would not kill the fowls. Some people give tar pills, but the bird sent has died suddenly—that is, whatever caused death was of short duration, and produced congestion. The crop contained no grass, but a large quantity of what appeared to be Indian meal. The gizzard was full of food, and the intestines loaded. Either she was unable to digest any food, or was stricken for death just after a hearty meal. There were no other indications of sickness, and the body was well nourished. If, as we suppose, the bird has been kept on Indian meal, it may afford some clue, as that has such a tendency to produce internal fat, that all the functions of the body are first impeded and then stopped. We believe that to be the present case, and if the food be continued all will die or become useless. Feed for a few days sparingly, and then give oatmeal, whole barley, and barleymeal alternately. Give them camphor in their water freely; and until the combs become ruddy again, give them bread steeped in strong ale.

POULTRY HOUSE (*J. D.*).—In the "Poultry Book for the Many" are some plans. You can have it free by post from our office if you enclose seven postage stamps with your address.

BANTAM COCK DYING (*A Subscriber*).—You lost your bird most likely from rook caused by the damp and cold weather. Another time give bread soaked in beer, and get a box of Bailey's rook pills.

GOLDEN PHEASANTS (*T. P., Sea House*).—Your Pheasants want lime or something of the same kind to form the shell of the egg. Give them a basketful of bricklayers' rubbish, thrown down in their pen. Let them have growing grass and fresh mould.

YOUNG PIGEONS DYING (*A Subscriber*).—Your birds either died from the fault of the old ones ceasing to feed them too soon, or from the late cold cheerless weather, and perhaps your loft is not perfectly dry. Our young Pigeons are doing much better now that the weather is warmer and drier.

PIGEONS FOR AN AVIARY (*B. B.*).—Any of the non-flying varieties do admirably for an aviary, such as high-class Tumblers, Jacobins, Fantails, &c., whereas it is half cruel to keep any of the Carrier variety, or Owls, or flying Tumblers so confined; Antwerps particularly dash about, and are with their power of wing sadly cramped. Of all varieties, perhaps, Fantails are most suited, as they neither can fly, nor wish to attempt it. We have some perfectly tame aviary ones. You should read Mr. Brent's "Pigeon Book," and follow his advice as to green food, condiments, &c., in order to keep Pigeons that are aviary birds in health.

FOOD FOR WRENS (*Subscriber and Constant Reader*).—Boiled rice, boiled potatoes and carrots, hard-boiled egg, bruised hampseed, maw seed, and scraped meat mixed together.

BREEDING MEAL WORMS (*Idem*).—These can be bred by putting a quantity into a good-sized earthenware-pan, three-fourths filled with bran and meal, small pieces of cloth and flannel, a small piece of fat, and several common wine corks; the pan to be tied over with brown paper perforated a little, and kept in a warm place.

CHANGING THE WATER FOR, AND FEEDING GOLD FISH (*Idem*).—Once every alternate day is sufficient to change the water for fish. It should be entirely fresh, but not filtered, as the insects in the water serve the fish for food. They should have, occasionally, small blood worms, or scraped meat and little pellets of bread or biscuit given them. Dip a small piece of stale bread or biscuit in the water, and make pellets about the size of a barley corn, and drop them in the water in front of the fish.

WOODBURY HIVES (*R. J.*).—Instructions for inducing swarms into Woodbury hives are given in page 82 of "The Gardener's Almanack," published at this office, price 1s. The frames will not shift if these instructions be followed, nor will they be afterwards fixed by the bees. Frames hives can be more conveniently manipulated when placed singly than when in a beehouse, and under these circumstances require the protection of roofs and outer cases such as are described and figured in pages 18 and 19 of the seventh edition of "Bee-keeping for the Many." The wooden block will be speedily fixed by the bees, but can be removed, and perforated zinc substituted at any time, when upward ventilation may be deemed desirable. The long openings which you describe as existing in the adapting board are all right. The plan of restricting the communication between stock hives and supers by means of very narrow slits has not yet been sufficiently tested to induce us to recommend its general adoption. You had better write direct to Mr. Woodbury, Mount Radford, Exeter, for information as to prices, Ligurians, &c.

PAYNE'S IMPROVED COTTAGERS' HIVES (*L. & S. W. R.*).—You can obtain them of any of the hive makers who advertise in this Journal.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 17—23, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m. a. h.	m. h	m. h.	m. h.	Days.	m. a.		
17	Th	Meeting of Royal and Linnæan Societies.	72.6	47.8	59.9	23	44 af 3	16	af 8	after.	20 af 0	0	26	168
18	F		72.1	50.4	61.2	21	44 3	17	8	36 af 1	56	0	9	49
19	S	Crystal Palace Rose Show. 4 SUNDAY AFTER TRINITY.	70.8	48.5	59.6	22	44 3	18	8	53 2	23 1	9	1	170
20	Sun		72.1	39.9	61.0	19	44 3	18 8	11 4	46 1	10	1	14	171
21	M	Bury St. Edmunds Horticultural Show.	74.1	50.4	57.8	17	44 3	18 8	25 5	14 2	11	1	27	174
22	Tu		73.7	49.0	61.3	16	45 3	19 8	37 6	48 2	12	1	41	175
23	W		72.7	47.2	60.0	16	45 3	19 8	42 7	26 2	13	1	53	174

From observations taken near London during the last forty-two years, the average day temperature of the week is 72.6°; and its night temperature 49.9°. The greatest heat was 93°, on the 19th and 22nd, 1846; and the lowest cold 30°, on the 20th, 1855. The greatest fall of rain was 0.84 inch.

PALMS.—No. 1.



LINNÆUS well-named these the princes of the vegetable world, for in majesty they surpass all other plants. In this country, however, they have not received the attention which they deserve; indeed, they were seldom included in private collections, but usually had to be sought after as curiosities in botanic gardens. Our neighbours across the Channel, appreciating their elegant and graceful foliage, use them largely for decorative purposes—for halls and corridors. Their persistent, leathery, green foliage endures very well the dry atmosphere, the dust, and the variable temperature of rooms and halls, making them very desirable for in-door decoration, even more so than Ferns and most handsome-foliaged plants, which in draughty and dusty places like these are neither healthy nor long-lived, and many fine specimens after remaining but a few days in them have to be removed only to pine away and die. With Palms the case is very different. A stay of weeks, and even of months in such places, does not seem to impair their beauty. It is only in a young state, however, that they are of a size suitable for general in-door decoration. Some of those which when young are best suited for this purpose, after several years' growth become too large, and are only available on particular occasions.

The size of Palms appears to me the greatest drawback to their extended culture, for few persons like to be continually purchasing young stock, as they must do if they wish to have plants suitable for replacing those becoming too large. It is true they may be raised from seed, but it would hardly pay private growers to do so, and still keep plants which have become too large, as Palms when full-grown attain such proportions as unfit them for ordinary plant houses. The only plan would be to grow them in almost the same size of pot, giving but a slight shift every second year, not potting more frequently than that, and maintaining the vigour of the plants by top-dressings of rich compost. In this way, I have no doubt, the plants may be employed for ten or twelve years, or perhaps more. Those that would not conform to this mode of treatment, would do very well for the greenhouse or conservatory as permanent occupants, and would also be available for house-decoration on particular occasions when it might be desirable to employ larger plants than usual, in order to give a greater effect than that produced by plants of nearly the same size. In lofty greenhouses they would for many years remain objects of great beauty and interest, whilst for conservatories they are indispensable, as they are as handsome as tree Ferns, and have a more noble appearance.

For in-door decoration Palms may be grown in any glass structure with the temperature of an intermediate house, or in one where the heat maintained is between that of a stove and greenhouse. No place could be better than a warm vinery; or even a cool vinery not altogether unheated, would answer admirably for a number of species; but where plants for in-door decoration are in great demand, a house should be set apart for them, as well as

for other plants capable of enduring the dry atmosphere, draughts, and dust of rooms. For general purposes a low-roofed house would be sufficient, but to have the plants of all sizes, both in height and in width, there should be room for growing large as well as small plants; and to secure fine foliage, the house should be in two divisions—one a sort of stove, and the other a greenhouse, taking care to assort the plants for each according to their requirements. It should be at least 20 feet wide, 6 feet high at the sides, and in the centre a height of 20 feet from the stage would not be too much. There might be a stage and path, each 3 feet wide, all round, and a central bed 8 feet wide. A house of this description would do for growing the plants, but not for raising them, as for the first two or three years they require a much higher temperature than older plants, and should have a hotbed to secure their becoming speedily re-established after potting-off, as it will afford the roots a uniform temperature and moisture without having recourse to frequent waterings, which, when a plant is newly potted, retard rooting. For established plants, bottom heat is not necessary.

As the seeds are not procurable in quantities, and at prices suited to our requirements, I need not make any particular comments on that mode of raising the plants. To raise them, however, all that is necessary is a brisk bottom heat of from 85° to 90°, and a top heat of from 70° or 75° to 85° or 90°, with a rather close and moist atmosphere. This should be maintained until the plants are of a size fit for potting-off. When fairly up they should be potted in 3-inch pots, using a compost of sandy fibrous peat, with one-fourth of silver sand. The seeds of some Palms do not vegetate for many weeks, or it may be months, therefore patience will have to be exercised. The seedlings should be continued in a brisk bottom and top heat until they become established, and then the temperature may be reduced, or the plants removed to a house having a night temperature of from 60° to 65° in winter, and 70° in summer, and a day temperature of 70° or 75° in winter, and from 75° to 85° or 90° in summer. Place them in larger pots as may be necessary, but do not give large shifts; keep them under rather than over-potted, and plunged in a bottom heat of 70° or 75°. When the pots are plunged in a hotbed for several weeks after potting, it will be sufficient to sprinkle the plants twice a-day with water slightly warmer than the atmosphere, as the less water given, the more speedy will be the rooting. The soil, however, must be kept moist. The best time for sowing the seeds is February or March. The plants should be well-hardened-off before being removed to a cooler house.

Although a house for the cultivation of Palms alone is desirable, they will succeed in any glass structure which is high enough, whether it be a stove or greenhouse. They are to be found in greater or less number in most collections, and they will be more grown as their merits become known, especially when they can be obtained at a lower price. At present the cost of large plants fit for decorative effect is not such as to lead many to enter on their culture. Small plants, however, may now be had at most of the

principal nurseries at a reasonable rate, and the prices will fall as the demand increases. Kept for a long time in the nursery, and but seldom called for, who can wonder that the prices should be high? On the Continent they are in demand, and the charges made for them are in proportion to the cost of propagation and growing them to a size fit for decorative purposes. I allude to this simply to show why the prices should be comparatively higher in this country than they are in France and Belgium. There is one fact which many overlook—namely, that plants raised and grown abroad, though they may be cheaper, are not nearly so good as those which have been grown for a time at least, if not actually raised, in this country.

The best time for obtaining the plants is in summer, say August, as the growth is then mostly formed, but when not to be carried any great distance, they may be safely removed at any time if protected from cold and cutting winds by careful packing. The worst months to move them are May and June, for the plants are then making new growths. They ought to be fresh potted when they are beginning to grow, and at no other time. It is desirable to keep them in comparatively small pots, as they never root freely when placed in a large mass of soil; besides, for decorative purposes they never are so much in request as when in pots of small size, for they can then be placed in vases and in positions for which large pots would be unsuitable; therefore, keep them in as small pots as possible.

The best time to repot is at the end of April or beginning of May, but if they begin to grow, put them as they start. The plants may be kept healthy in the same-sized pots for two or three years, and even then the shifts need not be large, for on turning them out of the pots, as much of the old soil as possible should be removed, and this being done the plant may be placed in a pot little larger than that in which it was previously growing. Good drainage should be given, but it must not take up too much of the pot-room, and should be covered with a thin layer of cocoa-nut fibre, or some of the rougher parts of the compost, after the finer part has been sifted out. In potting keep the plants rather high, not burying too much of the stem, at the same time let the roots be covered with soil at each repotting. The compost ought to be well worked-in amongst the roots; pot firmly, but do not make the soil very hard nor the surface very fine or firm, but leave it so that water and air will enter freely.

The most suitable soil is a light peat, which is very fibrous without being spongy, like that from decayed moss, and full of white sand. It should be torn in pieces with the hand and made rather fine, using it finer for the smaller plants, and coarser for the largest plants, but it must be used as it is, rough and small together. One-third sandy fibrous loam from turf not cut thicker than 1 inch may be added, and if that cannot be obtained, it is well to omit loam altogether. One-fourth cow dung not less than a year old, and dry, may be added, as well as one-sixth of silver sand, and the whole well mixed.

After potting watering should be carefully attended to, not giving more than enough to keep the soil moist, until the roots are working in it, then water well, and when growing freely copious supplies of water should be given so as to encourage growth. When the growths are complete the soil should be kept moist, inclining to dryness in winter. After the plants are potted, and are beginning to grow, the atmosphere can hardly be kept too moist. Do not syringe over the foliage in the heat of the day, but sprinkle the paths and walls. The plants may be syringed overhead morning and evening, the water being distributed so as to resemble a gentle shower. Syringing may be discontinued after the leaves are full sized, for if persevered in too long the foliage may become brown.

When the plants are commencing to grow, keep the atmosphere rather close, but still give air early enough in the day to dry the foliage before the sun shines powerfully on the house, which should be closed early in the afternoon in order to economise the sun heat as much as possible. When the growths are maturing, abundance of air and light should be given in order to perfect them, and to give the leaves that leathery texture and dark green appearance which add so much to the beauty of Palms. From March to July or August when the Palms are in a growing state, slight shading from very hot sun is necessary. For this purpose nothing is better than whitening, brought to the consistency of thin paint with milk, and laid over the glass with a brush.

The temperature at night from April to August should be from 60° to 65°, and in June, for the stove species, 70°; by day it may be from 70° to 75° without sun, and 80°, 85°, 90°, or more, with sun and abundance of air, avoiding cold currents.

In winter it may be 55° at night, and 60° during the early autumn and late summer months. The day temperature need not exceed 60° or 65° from fire heat, and 70° or 75° with sun. The majority of Palms will succeed in a winter temperature of 50°, if the atmosphere be kept dry, and the soil not made wet; and in rooms they will retain their freshness from September to April if the leaves be sponged every three or four weeks, supplying water at a temperature of about 60°, so as to keep the foliage from becoming limp. At the end of March they should be placed in heat to start them, and kept there until a good growth is well matured.

The greenhouse sorts will require a winter temperature of from 40° to 45°, and from March to August the thermometer may rise to from 50° to 55° at night, and 70° to 75° by day; but with sun heat to 80° or 85°. The plants may be placed in a vinery to mature the growth, and then will be available for greenhouses or in-door decoration.—G. ABBEY.

BEDDING TULIPS.

I HAVE read with much pleasure the article under this heading in page 335, by Mr. J. W. Cobb. Like him I am a cultivator of these beautiful flowers, as well as an ardent advocate of their more extended use. The list he has given is a good one, embracing almost every type of variation in these gorgeous flowers, and yet it appears deficient in a few varieties that I think should form a part of every collection. These are Keizer Kroon, in the way of Duchesse de Parma, but with a broad border of the purest yellow; flowers large and extremely showy; thoroughly reliable, being always certain, and unequalled, or at least unsurpassed, for massing; Princesse d'Autriche, of the style of Keizer Kroon, but instead of the yellow border, it is broadly feathered with this colour, and has a red flame the whole length of the centre of the petal;—a bold and showy variety; and Couleur Ponceau, a pretty flower for beds or massing in colour, rosy crimson edges, with a white flame up each petal; sometimes almost a self flower, at other times I have seen the petals nearly all white. These belong to the group of edged or bordered flowers.

Partly an edged flower, but classed with the self flowers, is Couleur Cardinal, a very showy flower, having a kind of bronzy crimson ground, and feathered with fiery crimson. The habit of growth and dark colour of the foliage of this variety are peculiar characteristics belonging to it, and it can, in consequence, be easily detected when in a growing state. Another fine self variety is Cramoisie Superbe, of a rosy cerise hue, a fine and showy flower; while its broken form, Cramoisie Royale, striped and sometimes feathered with white, is also very good. Between the first-named and Monument I cannot detect the slightest difference. Other fine self flowers are Van der Neer, deep purplish violet, unquestionably the best of all the self flowers of this hue of colour, as well as being of fine form; and Reine des Violettes, pale soft violet, a beautiful variety.

Of yellow flowers I can recommend La Cour de France, deep yellow, feathered and striped with crimson; and the red-striped Pottebakker, or simply the Yellow Pottebakker with red stripes; it is valuable as giving variation. A capital flower for bedding purposes is Rosa Mundi, white, delicately feathered with pale rose, exceedingly pretty, and very effective. If Mr. Cobb were to obtain some or all of these, I think he would be pleased with the quality and usefulness of the flowers.

For forming striking and effective masses of colour, nothing can compare with the Tulip; but a little care should be exercised in selecting the proper varieties. Either the flowers so employed should be self-coloured, or, when bicoloured, should be only such as are showy and striking. Of self flowers I should recommend Couronne Pourpre, crimson purple; Vermillon Brillant, bright scarlet crimson; and Couleur Cardinal, as representing crimson shades. Of purple shades I am content with Van der Neer, Proserpine, and Reine des Violettes. Of white flowers, White Pottebakker and Rosa Mundi. Of yellows, La Pluie d'Or, or Golden Prince; Prince de Ligne, pure yellow; and Yellow Pottebakker, adding to this group Thomas Moore. Of edged or bordered flowers, Keizer Kroon, Duchesse de Parma, a splendid bedder, and Princesse d'Autriche. Of striped flowers, Royal Standard, sometimes called Silver Standard; Bride of Hamlet, and Cramoisie Royale.

I must also beg to add a few double flowers to Mr. Cobb's list in this division. Gloria Solis is one which, though scarcely so striking as Touroesol, is yet a most useful and cheap kind, and is edged with deep gold. Overwinnaar, or La Belle Alli-

ance, is another—white ground, with heavy flakes of pale purple, a little late in blooming, but fine and showy. Rose Eclatante is a very good and useful rosy maroon self; and Ophir d'Or, scarlet, edged and striped with yellow.

Of "peculiar Tulips," or more properly speaking, species, I can commend *T. cornuta* as very effective in masses, the curious thread-like petals having a good though singular effect. I have grown this season four varieties of *T. cornuta*, but of these only one represented the fac-simile of the original flower—viz., *T. cornuta maculata*, this being blotched with yellow. The others were rich dark flowers, one named *T. cornuta fulgens* being particularly so; but they approached nearly to *T. Gesneriana* in build. *T. viridiflora* is both curious and pretty, having a greenish tint on a yellowish-white ground. *T. persica* is a dwarf-growing species, having pale yellow flowers with dark stripes on the backs of the petals, the blooms produced in threes. I obtained these species from Holland. I cannot say the descriptions are correct of the real species, as I have previously found much confusion to prevail in Holland in regard to species, and anything received from there under a specific name must not be accepted as thoroughly true till actually tested to be so.

There are many old favourites of the flower garden waiting to be restored to favour in the coming great restoration period. Many of these, together with hardy herbaceous plants, &c., are steadily but surely rising in popular esteem, and they who contemplate the cultivation of the early Tulips should also possess themselves of a few of these interesting and somewhat grotesque species. They will prove a fountain of unimagined interest and pleasure. Once taken to the floral home as a part of the domestic circle, they will not soon be banished from it to the desolation of being disregarded and forgotten.—VIA.

SUMMER STOPPING FRUIT-TREE SHOOTS.

THE readers of "our Journal" were last week indebted to your correspondent "ARCHAMBAUD" for his seasonable advice on summer pruning (see page 367). I think with him that the old, but still-too-often-practised, plan of stripping fruit trees of half their leaves at the end of June or July is a very bad one, and should be numbered with "things of the past."

I think the end of May is the proper time for going over the trees for the first time; but there is so much to be done then that it is too often neglected. Grass requires more frequent mowings, bedding-out has to be attended to, after which come thinning crops, staking, tying, and generally a whole host of weeds to conquer. About a great many places all these matters must be attended to before breastwood can be thought of. This year I took a fine day, about the middle of May, before the hurry and bustle of bedding-out commenced, and went over Apricot, Peach, Plum, and Pear trees, tying-in what was wanted, and pinching the tips of the other shoots, and I think the results will be better than if I had left the trees till now, even had I time to go over them. It is a wonder that there is not more harm done to trees bearing fruit by this wholesale destruction of foliage than there is, when we consider how dependent the roots of a tree are upon its leaves. A very striking illustration of this came under my notice some time ago—the result of bad management, by-the-by; but

"Let 'Live and learn,' our motto be,
In all we do, or say, or see,
And ne'er from dire misfortune flee.
For bear in mind,
To failure as success a foe,
You're sure to find."

Three or four young Cucumber plants had all their leaves destroyed by tobacco smoke. Immediately afterwards they were plunged in a brisk bottom heat, and after having started into fresh growth were turned out of their pots for the purpose of being planted-out, when, much to our astonishment, we discovered that their roots had perished with the leaves. On breaking the balls, however, we found roots pushing from the stem. Now, if by destroying the leaves of a Cucumber plant you at the same time destroy its roots, how many roots will be killed, or what will be the result of removing half the foliage of a Pear tree, and that the most active half, too, as the youngest leaves always are?

"ARCHAMBAUD," when he says, "Pinch the strongest shoots first, &c.," recommends a very common practice amongst gardeners, but, notwithstanding, I think it is a mistake to do so. If the strongest are to be pinched, then the weak ones should not be touched at all. I here quote a passage from Johnson's

"Science and Practice of Gardening" (page 233), which will say more in favour of this than any words of mine. "When it is necessary to stop all the shoots of a plant, the *weakest* ought to be first stopped, in order to get them stronger, and is easily shown on a common Laurel. Take a branch during June with two young shoots—the one very strong, the other a weak one; stop the weak one, and allow it to push two or three eyes into leaf, then stop the strong one, and before it can break again, the shoots on the weak one are grown, and able to draw on the sap more than those which are merely breaking bud on the strongest shoot. Then, suppose we leave only two shoots to come from the weaker parent, and four or five shoots from the stronger, the balance of strength is restored in a month, and you have six shoots of equal, or nearly equal, strength; but if you stop the strongest first, and allow it to break into three or four fresh ones before you stop the weak shoot, these three or four having the start of whatever the weakest shoot will give out, they will keep a-head till the end of the season, if they do not starve the weaker and later shoots altogether."—L. INGLIS.

CLOTH OF GOLD ROSE—THE NORTH-EAST WIND.

I HAD the pleasure last week of seeing in full bloom two magnificent plants of this "cory maiden," which so often refuses to display its beauties. They covered the front of a house belonging to the Misses Whittle, residing in this parish (Westwell), one of whom is an enthusiastic Rose fancier and grower. These plants were budded on the Boursault, and have been allowed to grow at will; they produce annually hundreds of blooms, and nothing can be grander than their appearance. One of the blooms cut for me measured 6½ inches in diameter when expanded. It is, I believe, under such circumstances only that Cloth of Gold can be grown to perfection, and when so grown it is the queen of all yellow Roses.

I have never witnessed anything like the destruction caused by a severe gale of wind accompanied with heavy rain, that we had throughout this neighbourhood on Friday, the 28th of May, at least as far as the Pear crop is concerned. Previous to that I had a fine crop, but now all under the trees are black balls as big as hazel nuts, which are, alas, my crop of Bon Châtiens, Benric de Capiaumont, &c. On the sides exposed to the wind there is not a Pear left, and the only trees that have really escaped are some dwarf Pears, which Mr. Rivers kindly sent me in the autumn. Not only are the Pears gone, but Filheris have also suffered, and the leaves of the Lime are scorched and withered as if in autumn. I am sure Mr. Kingsley could never have owned an exposed garden, or he would not have sung its praises.—D., Deal.

RINGING FRUIT TREES.

POSSIBLY the two extreme cases I am about to narrate may not only be interesting, but elicit from some of your scientific readers and practical physiologists their opinions, and under what circumstances in its immediate or remote effect the ringing of fruit trees can be beneficially adopted.

First, in the autumn of 1867, in consequence of an old Pear tree having produced no blossom, consequently no fruit, for many years, a friend advised the cutting or barking 2 inches of the trunk or one of its stems. The liber or inner bark of a stem 2 inches in diameter, was cut away 2 inches in length. The whole circle was perfect, even to the loss of some of the softer wood or alburnum.

About 6 inches above the cut the stem branched out into three less ones, each about 10 feet in length. The division was so effectual that none of the descending sap could pass back to the roots to perform its usual functions. The consequences of this operation were bloom and the ripening of two Pears last summer. No other part of the tree had bloom.

This year the appearance of the three branches above the cut stem was one mass of white blossom, there being only one blossom on any other part of the tree; and there are at this time, besides numbers that I have removed, thirty-six Pears, healthy, and apparently going on to maturity. The tree covers the wall to the extent of 22 feet. In the upper portion of the division of the bark cut, there is a very considerable enlargement, apparently from the deposition of the descending sap, but on the edge of the bark of the lower cut next the earth there is no enlargement.

Second, I have a very old Walnut tree, the trunk about

18 inches in diameter, which blossoms and bears fruit abundantly every year. The tree is hollow, has no wood, no alburnum, no pith, or medullary canal; it is now only bark, apparently extremely thickened; the solid portion of the sap separated from the water which held it in solution, and becoming deposited and cellular, supports the life of the tree.

Here are two instances of trees each bearing fruit, one denuded of its liber or bark by artificial means, the other from natural causes, having to all appearance no other means of life but the great excess of liber or bark.—J. C. H., Andover.

THE ARRANGEMENT OF CUT FLOWERS.—No. 2.

Those who have conservatories to resort to for their flowers and foliage have a comparatively easy task, and can, with a little practice, easily fill their vases with beauty. The colours of exotics are so clear and delicate, that nothing but simplicity is required in their arrangement. What, for instance, can be more beautiful than a Dobson vase arranged with Azaleas, a few sprays of pink at the bottom and white at the top, with nothing but Maidenhair Fern for foliage? or the magnificent Eucharis, with small bright-coloured flowers and leaves intermixed? or some richly tinted Pelargonium and the *Deutzia gracilis*, with any suitable Fern, though perhaps the Maidenhair is of all the most effective? Several of the fronds should be tied at some distance up the stem of the vase, to take off the bare appearance there would otherwise be; and before the flowers are put in, the glasses should be filled with sand and water, and—instead of moss, which is recommended for garden and wild flowers—the small-leaved Lycopod should be planted all over. It will live a considerable time, and seldom requires changing. Should the vase be small or the flowers very light, the sand may be dispensed with.

A group of Ferns only, in a high vase of frosted glass, has a very pleasant effect in a bright sunny room, and is especially recommended for dinner-table decoration in summer. Care should always be taken to suit the flowers to the room or place for which they are intended. In a gaily furnished room plenty of white flowers and foliage should be used, while in a dull or shaded room brilliant colouring is better; but the colours must be well blended, or they will completely spoil each other. Scarlet and white, as the most prominent colours, with a free mixture of small blue flowers, and a tinge of yellow here and there, with Ferns and Grasses, have a cheerful effect; but no two reds, blues, or violets should ever be placed side by side. Yellow should be used sparingly as a rule, though it often looks well when alone, or mixed with blue or violet. Purple and white flowers look exceedingly well with very yellow-green foliage, such as belongs to the white Periwinkle.

One very easy and effective way of arranging flowers is to have a number of small vases about the room, and to fill each with a distinct variety. This way is particularly useful for wild flowers, as their colours are seldom decided enough to mix well with other tints, and yet they will furnish many a fragrant and dainty decoration for the drawing-room if skillfully managed. Imagine a Dobson stand covered with deep pink Dog Roses, a basketful of Honeysuckle, a high vase of the blue water Forget-me-not, and some specimen glasses with any pretty flower that may chance to grow in the neighbourhood—the whole effect will be very good, and the scent delightful.

Though it is certainly more difficult to arrange garden and wild flowers than those which grow in a hot-house, yet if a little time and thought be expended on the subject, it is astonishing what a variety of beautiful arrangements may be made from the simplest materials. Almost everything that grows in an ordinary garden may be used with advantage at some time. Even the twigs of trees will sometimes look well as foliage, such as the dark brown leaves and nuts of the Copper Beech, the brush-like flower of the Sycamore, and the sweet scented Lime blossom. But everything should be arranged as Nature directs. That which grows in a drooping form should still be allowed to droop, and many a long-stemmed flower is spoiled by being clipped to the requirements of a shallow vase. Crowding also should be carefully avoided, and the light and graceful forms of plants and trees should be imitated as much as possible in the arrangement of flower vases.—L., Laughton.

TRAPPING WOODLICE.

Procure a small hamper, and the older the more suitable; put in some leaves of any kind—I prefer Rhubarb leaves, and when they are half rotten place the hamper on your beds, on

the flues, or on the house floor. Shake it every morning, and you will have plenty of work in killing the vermin on the floor, or you may shake them into water. One trial will be sufficient to convince anyone of the usefulness of this plan. If the woodlice are very numerous set several hampers; I have half a dozen.—JOSEPH DEAKIN.

THE QUINCE STOCK.

MORE things than Pears are worked upon the Quince stock in these days. Precociousness is a feature which is not confined either to gardening or the vegetable kingdom. Rapidity of action is the characteristic of the present age. The world has been going on slowly, but is now getting up steam, and concentrating its energies for the grand and final effort. The forces of creation seem as if they were converging to a focus, and rush on with accelerating speed, as if dragged forward by some gravitating influence that exerts an ever-increasing power. Every year the pace quickens. The momentum is communicated to everything, and provokes all branches of industry. Even the children seem to grow up sooner nowadays, and have a Quince-stock maturity about them, talk sense, and imitate their grandmothers before their teeth are well cut. Good old-world notions and customs are disappearing at an alarming rate, leaving in many cases but temporary substitutes behind them. Now and then, in some quiet English hamlet or rustic Scottish clachan, where picnics love to rendezvous and indulge the hereditary instincts of human nature, we light upon that old-world leisureliness and stability of purpose which characterised our progenitors before the age of railways and electric telegraphs. But even round these isolated spots the circle is gradually narrowing; and before their present inhabitants have gone to rest where

"The rude forefathers of the hamlet sleep,"

the tide of progress will have swept over them, and borne away upon its rapid current the last vestiges of a former age.

To no profession or industry are these remarks more applicable than to gardening. The concentration of thought and action which has been brought to bear upon all questions relating to horticulture is now visible in the almost complete mastery which the gardener exercises over every kind of fruit and vegetable that comes under his care. Perhaps the most noticeable progress we have made has been in the culture of fruit. In this department we have certainly divested ourselves of many cumbrous notions, and dispensed with even more cumbrous appliances. Ends are accomplished nowadays with a rapidity that would have astonished our ancestors. Many, with an interest in futurity which is becoming strange amongst us, planted trees, and were content if they saw the first-fruits thereof, leaving them as a legacy to their descendants. And let us admit, that but for their foresight in this respect many a fruit room in these days would show but a scant supply. Now, however, he who plants expects to reap. Gardens and orchards spring up contemporaneously with bricks and mortar; and when the wealthy retired man of business takes possession of his new mansion, he expects to find his garden furnished with trees bearing fruit after their kind, and the entire horticultural department in an already matured condition, and prepared to contribute to his comfort as regularly as his kitchen or dairy. This is all very gratifying, no doubt, and speaks for itself, and may be called gardening on the Doucin and Quinceo principle; but, however, adapted to meet special ends, it lacks the elements of durability, and should not be pushed beyond its special province. We have a partiality for the old, luxuriantly-laden orchards, the feature of many an homestead, and chief source of supply in many an establishment. I always find that where there is a reserve of this kind the fruit-room is better filled. Quantity is always as important a consideration in a garden as quality; and it is comforting to have a supply to fall back upon after the limited produce of the orchard house is exhausted. Miniature fruit gardens and orchard houses are undeniable realities, however, and commendable institutions; but, compared to the fail-me-never ancestral trees in the cottager's garden, they are what the thumb-pot Oaks of the Chinese are to their English congeners for the purpose of shipbuilding.

The remarks have been suggested by reading the very able and exhaustive paper of Mr. McMillan [see page 308] though they are not intended to apply to him. I see, however, that, like many others, he is impressed in favour of the Quince stock—whether from practical experience or not, he does not say; and if I understand him aright, he would only be guided by

considerations of soil and climate in adopting it generally, in preference to the Pear, for standards or pyramids.

We are experimenting on a limited scale with the Apple on the French Paradise stock, and may have something to say about it some other time; but we have not tried the Quince for the Pear, nor—although we do not pretend to decide conclusively in the matter—would we like to plant extensively on it for general purposes under any circumstances, except in the orchard house. I have seen it tried at different times and places, but in no case has the result ever been such as would encourage any one to use it in preference to the Pear, considering what can be accomplished with the latter under judicious cultivation. Some varieties will succeed on the Quince for a while; but it is an acknowledged fact, that others will refuse to live on it, and that in a general way they are shortlived. The trees are also small, and the fruit limited in quantity, disadvantages which the slight superiority which it possesses in flavour does not compensate. It is true that Mr. Robert Thompson speaks of trees which have flourished on the Quince stock for forty years, but this seems to have been an exceptional case, for he is cautious in recommending it, unless for special situations, while Dr. Lindley discusses the subject only in a purely theoretical way. When in the west of Scotland, about two years ago, I called upon a gardener who had been led to plant a number of Pears worked on the Quince some years before, in the sanguine anticipation of being able to counteract the disadvantages of a dropping climate; but the experiment had resulted in disappointment. Although the trees had the advantage of a wall and had every attention, they were not in a flourishing condition. Some of them seemed as if they were not long for this world; and even the healthiest looked as if getting to the top of the wall was a feat never contemplated in their ambition. There has, I think, been ample time to test the merits of the Quince stock; but I question if any favourable examples of its adaptability for general purposes could be found. Mr. Powell, of Frogmore, whose practical experience in fruit tree culture entitles him to speak on the subject, says:—"As far as my experience goes in this matter, I think the Pear worked on the Quince only fit for a very small garden, or for orchard houses; and it is evident only particular kinds will grow on the Quince for any length of time: others will scarcely exist, are unfit to bear fruit either in quantity or quality, and perish in the end. And if a uniform growth, fine fruit, and long-lived trees be sought for, it is better to use the Pear stock; and by judicious root-pruning, miniature trees in a productive state may be obtained equally as well as on the Quince stock; and for general purposes the Pear is to be preferred." Seeing, therefore, that the advantages of the Quince are, to say the least, doubtful, and considering that equally satisfactory and more lasting results can be obtained by using the Pear, and the mortification of seeing your trees drop off one by one, just when they are "come of age," avoided, would it be advisable to recommend it?

Most assuredly the roots of the Pear stock will penetrate deeply into the subsoil if allowed, as we have had experience, and the results will be canker, cracking, and other evils; but this is simply a question of attention and labour, without which, it is admitted, we cannot succeed with the Quince. It is surprising how, by pitching and regular root-pruning, trees on the Pear stock can be dwarfed. In the end a kind of balance between the roots and branches is obtained, and there is little difficulty afterwards in keeping them in that condition, while a skilful use of the pruning knife is all that is required to keep the trees in form.

Some years ago we found a lot of young pyramid Pear trees here, about ten or a dozen years of age, that had run riot with their roots in the deep loamy subsoil beneath, and were making growths every year from 3 to 5 feet in length. One half of them we root-pruned on one side only; the others we did all round, chopping the long, bare, fibrous roots through about 4 feet from the stem, and cutting a tongue on them with the knife about every 9 inches. Those which had been half done showed very little appearance of having been meddled with the following season, saving a slight decrease in the vigour of the shoots on the side which had been root-pruned. The others of course sustained a severe check, and made nothing but leaves the following summer. Since then they have been once or twice root-pruned, or lifted altogether in making some arrangements among the trees, and most of them have borne excellent fruit every year. Some varieties do not finish as well as could be desired, but the situation is high and cold, and unfavourable to Pears generally as standards.

By these means, and mulching with manure as much as we can afford, we keep the roots within a few inches of the surface; and when lifted, they are a mass of fibres, and more like the roots of a Box tree than anything else. In this condition the trees are easily moved. Four men can lift a dozen of them in a short day with very little injury to the roots; and we have had excellent fruit off trees that had been transplanted the preceding winter. The trees in question are now covered with a perfect spray of flower buds, which look, in their half-expanded condition, like a swarm of bees on the branches. We contrive, if possible, to lift about a third of the trees every autumn, and in this way we are always sure of a crop on some of them.—J. SIMPSON (*The Gardener*).

AUTUMNAL COLOURS OF LEAVES.

I can attest that the statement in the annexed extract is not "hunkum," for I have repeated the experiment more than once. "The green colour of leaves, an element of which must be a vegetable blue, has led an American experimentalist to the conclusion that leaves turn red at the end of the season through the action of an acid, and that the green colour could be restored by the action of an alkali. The conclusion has been verified by experiment:—autumnal leaves placed under a receiver with vapour of ammonia in nearly every instance lost the red colour and renewed their green. In some, such as the Sassafras, Blackberry, and Maple, the change was rapid and could be watched by the eye, while others, particularly certain Oaks, turned gradually brown, without showing any appearance of green."—R. T. C.

[The experiment needed no repetition, for it was proved many years since that the autumnal tints of leaves are caused by the presence of an excess of acid. The following is an extract from Johnson's "Science and Practice of Gardening" detailing and explaining the fact:—

"The yellow, red, and light brown tints which render the foliage of our plants so beautiful in autumn, arise from the absorption of an excess of oxygen gas. When the reduced temperature of the season deprives a leaf of the power to elaborate the sap, and, indeed, stops the circulation to it of that fluid, the absorbent powers of the organ are reversed, and, instead of carbonic acid, it inhales oxygen. The effect is speedily perceptible. Gallic acid forms, and this, modified by the various saline constituents of different leaves, changes the hue of their green colouring matter, called chlorophyll or chromule, into various tints of yellow, red, and brown. This is the general effect of acids acting upon vegetable greens, and that it is the cause of the autumnal change of colour in leaves is proved by the fact, that if a green leaf be dipped into an acid it assumes the same hue; and if some red or yellow leaves be dipped into an alkaline solution they are rendered green—the alkali evidently neutralising the acid that had wrought the unnatural change of colour."]

ASPARAGUS CUTTING.

This subject has of late been very much in my thoughts, and I had intended writing a few words on it before your reply to "T," in your number of May 27th appeared. I had myself acted pretty much as your reply to "T," recommended; it is only since I have come to my present locality, and watched the treatment adopted by a friend, that I have been led to doubt the propriety of the practice. My friend has five or six beds, made forty years ago at least. Before they came into his possession he used frequently to receive a dish with the owners compliments; my friend says that the shoots were most diminutive, smaller than a tobacco pipe. When, thirty or more years ago, he came into possession, he began on another tack—he never would cut a small shoot; accordingly for many years his dishes were few, but he persistently adhered to his plan, and by degrees the size very materially increased. This season I have seen these beds daily, and daily dishes have been cut not only for himself but for his friends, for I call his garden the "parish garden." Rarely does he cut a shoot that is not half an inch in diameter; indeed, he is so particular that he will not allow any profane hands to meddle with the beds, he alone wielding the knife! His friends say, "Why, you do not half cut your beds." This, however, the day-after-day cutting disproves, but the beds appear so, because every small head is sacred, and old as the beds are, each year the size increases, so that by-and-by there will be no small heads

to cut. At a neighbouring village one of his friends has carried on this plan for more than forty years with this addition, that, having eight beds, two are yearly sowed, not a single head large or small being cut, and the size of the Asparagus is almost fabulous. Had such a vegetable been known in Brobdingnag, these heads seem to be about the size that we might have expected to find in those regions, and I am almost disposed to think that if the same treatment be continued, we may by-and-by hear of cutting a head of Asparagus, as you would a head of Broccoli, and making one do duty for a party!

I may mention, further, that my friend rarely cuts after the 7th of June unless the season is very late, and at the present time his beds look like small woods. Looking at the results I feel bound to say that his treatment seems the right course, and to say the least of it, a dish of Asparagus, with the heads all of about the same size, looks far more presentable than a dish in which the master of the garden appears to have cut everything that came to hand, large or small.—Y. B. A. Z.

ROYAL HORTICULTURAL SOCIETY.

JUNE 15TH.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Stevens, the Gardens, Trentham, sent a seedling kitchen Apple, which was said to be an excellent keeper, and of first-rate quality, but it was stated that the fruit had been packed for a week, and the flavour was quite gone. Mr. Stevens likewise sent specimens of Calville Blanche, also quite destitute of flavour. Mr. Hallett, of Cossington, near Bridgewater, sent two large specimens of the Madras Citron, which had been produced in a pot. Messrs. Barr & Sngden sent specimens of a handsome Cabbage Lettuce, which was recognised as a variety grown for many years at Brockett Hall, under the name of Nicholson's Cabbage Lettuce. The same gentlemen also exhibited specimens of Hicks's Hardy White Cos, a splendid Lettuce, the hardiest of all the Cos Lettuces. Mr. John Ronald, nurseryman, Chichester, sent good samples of a brown Cos Lettuce, which was considered a good stock of Brown Cos.

FLORAL COMMITTEE.—Rev. J. Dix in the chair. This was one of the most successful meetings that have been held this year; the prizes offered for double Zonal Pelargoniums, Pinks, and Calceolarias were well competed for, and we can most truly assert that the double Zonal Pelargoniums were never seen so fine before. Messrs. Carter's plants were magnificent.

Messrs. Veitch exhibited a collection of Gloxinias and other plants, which was awarded a special certificate; also three boxes of very fine cut Roses, which received the same award. Mr. Cripps, Tanbridge Wells, exhibited two new seedling Clematises, and a greyish-blue called Excelsior, showing a disposition to produce double flowers, was awarded a first-class certificate. Should this tendency to form double blossoms be maintained, we shall have a new race of these beautiful flowers. The other was Lady Cicely Nevill, a large white flower, but the petals too flimsy, and not equal to Madame Van Houtte, which was exhibited last year.

Mr. B. Williams, Holloway, received a first-class certificate for *Calamus ciliaris*, and a special certificate for his collection of plants; among them were a fine specimen *Aralia Sieboldii* aureo-variegata, *Pandanus glaucophyllus*, *Thrinax grandis*, *Lælia Wolstenholmi*, and *Echeveria agavoides*. Mr. B. Findlay, Botanical Garden, Manchester, received a first-class certificate for a fine specimen of *Miltonia spectabilis*, variety. Mr. Wm. Paul likewise received a first-class certificate for a new pillar Rose Prince Leopold, a fine, rich crimson, very full flower. This Rose was sent as a climber, but the Committee objected to this term, the plant not being strictly of the climbing character. A pillar Rose would be its more appropriate designation. Mr. Ley received a first-class certificate for *Adiantum eximium* Leyi.

Messrs. Rolleston received a first-class certificate for *Epidendrum vitellinum* majus, a very fine Orchid, though by no means new. A special certificate was awarded the collection of plants, containing some very beautiful Orchids, among them *Cypripedium Dayanum* and *Cypripedium Schlimii*.

Mr. Turner exhibited two boxes of cut Roses, some of the finest flowers ever seen, so bright in colour, and of such unusual size. A special certificate was awarded them.

Messrs. E. G. Henderson, Wellington Road, sent several Tricolor Zonal Pelargoniums, more remarkable for their names than as distinct or improved varieties; also *Gnaphalium tomentosum*, *Cineraria acanthifolia* and *Achyrocline Saundersii*, three bedding plants. Mr. Foster exhibited several seedling Show Pelargoniums, many of them very beautiful, but not distinct from known varieties. Admiration received a first-class certificate, and Pollie a second-class certificate.

Messrs. Smith, Dulwich, brought a very beautiful Cactus violaceus, a hybrid between *speciosissimus* and *Ackermannii*. A first-class certificate was awarded it. A special certificate was also given for their collection of Bicolor and Bronze Zonal Pelargoniums.

Messrs. Carter brought three Tricolor Zonal Pelargoniums—viz., Ettie Beale, Prince Teck, and Princess Mary, all of which had been noticed before. Messrs. Lee, Hammersmith, exhibited a golden form

of Zonal Pelargonium Brilliantissima. Mr. Ford, gardener to E. Holbard, Esq., received a first-class certificate for a very beautiful seedling Ivy-leaved Pelargonium, a hybrid between the large white-flowering Ivyleaf and Mrs. Pollock; the broad-petaled salmon flowers were very attractive.

G. F. Wilson, Esq., brought several cut specimens of Lilies. Messrs. Standish sent several promising seedling Rhododendrons; Mr. Noble, fine specimens of *Spiræa palmata*, one of the most beautiful hardy plants Mr. Fortune ever introduced; also a curious seedling Rhododendron Fra Diavolo, with malformed flowers. Mr. James, gardener to W. F. Watson, Esq., sent a seedling Tricolor Zonal Pelargonium, called Mary James. Mr. J. Chambers, gardener to J. Lawrence, Esq., brought a seedling *Lobelia speciosa superba*, a tall-growing variety, of no use as a bedding plant.

A special certificate was awarded to Monsieur Baublant for his well-arranged collection of artificial plants and flowers. Nothing has ever been seen to equal this collection; the Caladiums, Lilies, Violets, Roses, &c., were true to life, so true that they were with difficulty distinguished from the plants placed next to them. The Council have voted the Society's large silver medal to M. Baublant, as a compliment and a mark of their approbation of the great skill displayed. These flowers are made of muslin, silk, or velvet, according to circumstances, then painted to accurately resemble nature, and covered with a thin coating of wax.

Special prizes offered this day were well competed for. The best six double-flowering Zonal Pelargoniums came from Messrs. Carter; the kinds were Marie Lemoine, Madame Lemoine, Wilhelm Pötzer, and Gloire de Nancy. Messrs. Standish & Co. were second with Marie Lemoine, Gloire de Nancy, Wilhelm Pötzer, Capitaine l'Hermitte; these were large specimens, and not in full flower. Mr. C. Turner took the third prize with Victor Lemoine, Double Tom Thumb, and Surpasse Gloire de Nancy. For single plants of double Zonal Pelargoniums, the first prize went to Messrs. Carter for Marie Lemoine; the second to Mr. Turner for Madame Lemoine.

For twenty-four Pinks, Mr. Turner was first; Mr. Hooper, Bath, second; and Mr. Bragg, Slough, third. For twelve, Mr. Pizzey, gardener to Sir E. Perry, was first; Mr. Kingston, Militia Barracks, Bath, second; and Mr. James Smith, Bath, third.

For six Calceolarias, the first prize was taken by Mr. James, gardener to W. F. Watson, Esq., Isleworth, with plants in splendid bloom; the second by Messrs. Dobson, of Isleworth.

Mr. Wilson Saunders' first prize for twelve hardy herbaceous plants in flower was awarded to Mr. Ware, of Tottenham, who exhibited the following—viz., *Eurothera marginata*, *Silene alpestris*, *Calceolaria Kellyana*, *Aster alpinus*, *Hesperis matronalis purpurea flore pleno*, *Delphinium alpestrale*, *D. Belladonna*, *Onosma tauricum*, *Lilium umbellatum*, *Funkia albo-marginata*, *Orchis latifolia maculata*, and *Lycnis fulgens*.

An extra prize was awarded to Mr. Hooper, Bath, for his collection of Pansies and Ranunculus.

GENERAL MEETING.—Lord Londesborough in the chair. Nine new Fellows were elected, and the Keighley Floral and Horticultural Society was admitted into union, after the Rev. M. J. Berkeley read a paper by Mr. Fenn on the Potatoes exhibited by him at the meeting of the 1st inst., and of which the substance was given in p. 370. Mr. Berkeley said it appeared to him that Mr. Fenn's observations were very valuable, both in a scientific and practical point of view, and remarked that he had himself pursued a similar practice for some years, and with uniform success; but that he exposed the seed Potatoes to the sun to green. He hoped that experiments on the subject at Chiswick would lead to valuable results. Mr. Fenn also stated he had grafted the Ribston Pippin on the Blenheim Pippin, and the result had been that the former lost its properties as a dessert Apple, but became a good culinary fruit, which it was not when not thus grafted. With regard to a plant shown as *Goodoya splendida* at the last meeting, some doubt was entertained whether it was correctly named or not; but in Hooker's "Journal of Botany" a species was figured, in which the leaves were of similar character to those of the plant exhibited. *Rhododendron Fra Diavolo*, from Mr. Noble, was noticed as being interesting, from showing how a monstrosity was transmitted from one parent to its progeny; and attention was also directed to a Pelargonium in a miserable state, from being attacked by *Orobancha minor*, which had nearly killed the plant. At Florence, Mr. Berkeley added, a species of *Orobancha* attacks the Peas to such an extent, that it is very difficult to gather a dish. A white Lily, in the collection from Chiswick, and which had been received from Peru by Mr. Wilson Saunders, was then stated to be not a distinct species, but merely a form of the common white Lily. *Spiræa palmata* was then referred to as one of the most promising of herbaceous plants introduced of late years. It had been described by Thunberg a hundred years ago, but the plant known under the same name in our gardens was not identical with it. A curious condition of the common Sloe, and the curl in Peach-tree leaves, next occupied attention. Mr. Berkeley considered that one form of this disease is caused by a fungus, and another by an aphid. *Allium arsimum*, a British plant, of which a number of the white flowers had been brought by Major Trevor Clarke, was pointed out as being worthy of more attention as an ornamental plant than it had received, notwithstanding its odor; likewise *Mantisia saltatoria*, familiarly known as "Opera Girls,"

which, though bearing considerable resemblance to the Orchid family, belongs to the same natural order as Ginger.

Mr. Wilson Saunders said an article had appeared in the *Gardeners' Chronicle* of last week, in which the Editors suggested taking up the old species of *Pelargonium*, with the view of obtaining fresh races by hybridisation and cross-breeding; now, as he had nearly two hundred neglected and rejected kinds, many of which were exceedingly pretty, if any gentleman were desirous to make the experiment he would be glad to give away as many cuttings of species as his stock would produce. He could not perceive why fine flowers should not be combined with elegant and highly scented foliage.

Major R. Trevor Clarke called attention to the Unique *Pelargoniums* which were very much cultivated at one time, and of which he had brought out flowers to the meeting. Major Clarke added that he had suggested that day the propriety of giving a small prize for button-hole bouquets, to be competed for at the next Tuesday meeting. The suggestion had been adopted, and though the details had not yet been settled, they would be given in the gardening papers next week. He also pointed out a small collection of *Pelargoniums* raised by himself, of which the progenitors were *P. capitatum* and the true wild African *P. geroifolium*, not that of the nurseries. He likewise exhibited two differently coloured flowers from a *Pelargonium* plant which always sports in this way.

Mr. Bateman read a brief extract from a note from Mr. Fortune respecting *Spiraea palmata*, before alluded to, and which, like all plants from the north of Japan, Mr. Fortune stated, was perfectly hardy, and, Mr. Bateman added, it would be a pretty companion to *Hortia japonica*. Mr. Bateman then gave a lecture on the genus *Masdevallia*, in which he traced its botanical relations, its rise into importance, till now Reichenbach considers there are as many as sixty species, and gave examples of the fantastic forms which the flowers assume. The beauty of these was illustrated by living plants of *Masdevallia coccinea* and *Veitchiana*, flowered by Messrs. Veitch, and drawings by Mr. Fitch from specimens of others in the Kew herbarium. Mr. Bateman urged nurserymen and botanical collectors to search for new species, and to make fresh importations of those already introduced, as, if successful, the result would be highly remunerative to the explorer, and beneficial to Orchid-growers.

MR. ANTHONY WATERER'S RHODODENDRON SHOW.—We have already noticed this fine exhibition, held under the large tent in the Royal Horticultural Society's Gardens, South Kensington, but it was at too early a period for the newer and more interesting varieties to be seen in perfection. Now, however, that many of them are in full beauty, it may be useful to notice those which from their colour, size, and profusion of bloom are most desirable. These are:—*Mr. R. Holford*, rich rosy salmon, distinct, and having large fine trusses; *Old Port*, plum-coloured, very free-flowering; *Mrs. Milner*, crimson, also of fine free-flowering habit; *Mrs. John Clutton*, the finest of the white kinds; *James Bateman*, large trusses, rosy scarlet; *Caractacus*, large trusses, purplish crimson, very fine; and *Lady Clement*, rosy scarlet, blotched with black, and of excellent free-flowering habit. We also noticed two unnamed seedlings, one being lilac with a blotch of dark spots, good truss; the other, raised from *Stella*, was a fine bright rose with dark spots.

Of older varieties, *Minnie*, white tinged with blush, and having a large blotch of orange spots, is an excellent free-flowering kind, one of the best of its colour. *Alarm*, too, is very conspicuous, and should be in every collection; its pale pink flowers edged with crimson being very effective. *Embratium*, pink with a lighter centre, has the edges of the petals frilled, and is a pleasing variety. *Concessum*, clear pink with a lighter centre, is beautiful and effective, as also *Bylsianum* and *Beauty of Surrey*; the latter is very hardy and free-flowering, the plants being a mass of bloom. *Nigrescens*, very dark plum, first-rate, but now nearly over; *Titien*; *Vandyke*; *ceruleseens*, one of the catwinkle varieties; and a large plant of *Braynham* 10 feet high, are also worthy of remark. There are, besides, a number of seedlings, which, though unnamed and never intended to be named, have very good flowers, and are excellent for planting by the sides of drives and in similar positions.

The exhibition will remain open about a fortnight longer if the present cool weather continue; but no time should be lost in visiting it, for a few hot days now would much mar the beauty of one of the finest Rhododendron shows ever held near London.

MESSRS. JOHN WATERER & SONS' RHODODENDRON SHOW.—The exhibition of Rhododendrons from the Bagshot Nursery, in the Royal Botanic Gardens, Regent's Park, is this year as effective as a whole, and as beautiful in detail, as it was in previous years, forming, in fact, a beautifully-arranged picture, in which the masses of colour are gorgeous without being overpowering. Of the newer kinds, *Tamerlane* is noticeable by its large trusses of maroon flowers with very dark edges, and is a fine late variety; and *Narcissus*, rosy scarlet, is very showy. There is also an unnamed rose-coloured kind with conspicuous dark spots, but not yet fully out, which looks very promising. *Mrs. Williams*, pale pink, edged with purplish lilac, is pleasing; so is *Mr. Waterer*, pink. *Helen Waterer*, pale rose with yellow spots, and edged with rosy crimson, produces fine, large trusses. *Antirrhinum*

is another new rose-coloured variety with dark spots, but the plant shown of it is small, and it will, probably, be better next year. *Sir William Armstrong*, light crimson, is very brilliant; but still more so is *Michael Waterer*, which has been noticed in previous reports, and which is, undoubtedly, one of the finest of the crimson scarlet kinds. *Admiration*, bright rosy crimson, is also a fine mass of bloom, and *Raphael* is another fine crimson with dark spots. *Princess Mary of Cambridge*, *Joseph Whitworth*, and *Minnie*, which have been noticed in previous years, maintain their character as being among the best of the more recent varieties.

GRAFTING THE PEAR ON THE WHITETHORN.

MUCH attention is being given in some parts of the west to grafting the Pear on the Whitethorn. Whitethorn with the English is confined to one species of *Crataegus*, *C. oxyacantha*; but here almost all the species of *Crataegus* are classed as Whitethorns. We have seen five different stocks used all as Whitethorns, and yet all having different ratios of growth, which will materially affect success, as the Pear seems to take freely on all the *Crataegus* tribe. The strongest grower of all these Thorns is the *Crataegus coccinea*. This in the western States is most commonly known as Whitethorn. It will often make a tree as large as a moderate-sized Plum tree. The next most vigorous is the *C. cordata*, its most general name being Washington White Thorn. Then comes *C. tomentosa*, with its numerous varieties, common all over the United States, and known as Blackthorn, Pear Whitethorn, and some others. The Cockspur Hawthorn, *Crataegus crus-galli*, comes next, and then the English Whitethorn, *C. oxyacantha*. A beautiful small-growing Thorn, very vigorous in its shoots, and yet a low, dwarf-grower, is the *C. parvifolia*. We have not seen the Pear tried on this, but have no doubt of its success, and it would be just the thing for small dwarfs. We have seen it growing wild abundantly through New Jersey, and it is, no doubt, plentiful south and south-west.

We do not know what will be the effect of a general trial of the Thorn for a stock. It is not so easy to raise as the Pear or Quince, and it has the disadvantage of being, like the Quince, very liable to attacks from a borer. If it be found to do very well, and be really desirable as a successful stock, the English Whitethorn, which can be imported in large quantities for a small figure, might be the best. We are not sanguine, however, that any stocks yet named will supersede the common Pear and Quince stocks.—(*American Gardener's Monthly*.)

ROSES IN THE NORTH OF IRELAND—RIDGE MELONS.

I NEVER remember to have seen Roses in this part of the country (north of Ireland), look so miserably on June 5th. We had, as you had, I believe, in England, an unusually mild muggy winter. In February, consequently, the Roses were, I may say, in full leaf and covered with flower buds: then came the most wicked, pinching, biting, blasting spring ever experienced, even in this region of atrocious springs, and shattered skeletons were what the Roses turned into. Up to the 1st of June they made no progress whatever. Since that time we have had nice, soft, genial weather, and I see a great change. Roses against walls have done worse than others planted in beds.

I wonder how Mr. Radclyffe would get on here with our climate. One feels horribly out of temper when he tells us of all the Roses he has now in flower. The only Roses I have in bloom are *Charles Lawson*, *Gloire de Dijon*, and *John Hopper*, all against walls. *Charles Rouillard* promises to bloom much more abundantly this year than it did last season, when it entirely ran to wood; but I cannot make *Charles Lefebvre* succeed at all decently, though I give it the very best and richest treatment. It has its soil stirred generally every day, is well syringed and watered, and in fact is in every way petted if not pampered; it will not grow and will not blow, and will not do anything it ought to do. I deny its claim to the title of premier given it by Mr. Radclyffe, at least as far as this climate is concerned, and place the forfeited crown on Alfred Colomb's head. Well, the latter deserves it. A fief is simply grand, without a fault, except that of not blowing very late in the season. Climbing *Devoniensis* has with me shed all its buds. It was covered with them, but the blighting winds destroyed them, and it does not as yet promise an early crop of successors. *Maréchal Niel* is still with a hard unyielding kind of buds. I doubt its ever doing very well here out of doors, and its excessive

scragginess makes it a repulsive plant. We still greatly want a good yellow. South of England Roses will not suit our requirements in the mid-north of Ireland. So much for Roses.

I was much interested in Mr. H. Weir's paper on the Achape-norricher Melon (page 337). As it would be very desirable to have other experiences on the subject, I will detail mine, though very different from his, in hopes that others may send theirs. As I disbelieved in the possibility of a ridge Melon (here, at all events), I determined to give it last year warm Cucumber treatment. It grew most luxuriantly, never showed a fruit bud, and in August rotted away without any apparent reason for its doing so. A friend to whom I gave a plant turned up his nose at it, and left it standing out in its pot all through the summer. More by good luck than good guiding, it was placed quite late in the season in the corner of a cold frame, where it grew moderately, and on the 10th of October ripened a fine large fruit of excellent flavour. From all this I gather that the plant does not like coddling, and is really a hardy fruit. I have been very unlucky this year; hardly any of my bought seeds have vegetated, and a similar complaint is made by neighbours whom I advised to try it.—Q. Q.

COOL-HOUSE ORCHIDS.—No. 5.

**CYPRIPEDIUM INSIGNE*.—Solitary green-tinged yellow flowers, spotted with purplish brown, and tipped with white. January to June. Nepal.

**C. VENUSTUM*.—Reddish brown and green, finely veined. Autumn and spring. Nepal.

The *Cypripediums* being terrestrial Orchids require a compost of equal parts of turfy peat, light fibrous loam, old cow dung, charcoal, and potsherds. Provide good drainage, and keep them well supplied with water when growing, not allowing them at any time to become too dry. It will be sufficient to keep them just moist in winter. Water them copiously when they are flowering. They are very suitable for cultivation in greenhouses, affording them a position near the glass, and shading them from powerful sun.

DENDROBIUM CHRYSANTHEMUM.—Orange flowers with a crimson-veined lip. February and later. Nepal. It is best grown in a basket, having pendent stems.

D. NOBILE.—White, lemon, or rose-shaded flowers, with a purple blotch on the lip. March to May. Macao.

D. MONILIFORME.—Perlish semi-transparent flowers, rosy purple at the tips. April. Japan.

**D. SPECIOSUM*.—Yellowish changing to white. January to April. Australia.

EPIDENDRUM MACROCHILUM.—Perlish flowers; rose, crimson, or white and purple lips. July. Mexico and New Granada.

E. NEMORALE.—Racemes of purplish or lilac pink flowers. June. Mexico and New Granada.

**E. VITELLINUM*.—Orange or yellow flowers, in spikes; flowers very dorable. Autumn. Mexico.

**LELIA ACUMINATA*.—White or rose-tinted flowers, purple-blotched at the base, produced in spikes. June. Mexico.

L. ANCEPS.—Rosy purple or lilac pink, orange-purple-tipped lip. January. Mexico.

**L. AUTUNNALIS*.—Rosy flowers. September. Mexico.

L. PORPURATA.—Rosy purple, orange throat, purple-streaked lip, bat variable. June. Brazil.

**L. SUPERBIENS*.—Flowers rosy purple, yellow throat; in clusters on tall stalks. November. Guatemala.

LEPTOTES BICOLOR.—White and purple flowers; plant small, and Rush-like in leaf. April and later. Brazil. It succeeds in a basket, or in a pot nearly filled with drainage, the plants being raised high in the centre and placed near the glass.

**LYCASTE CRUENTA*.—Orange yellow flowers, crimson-spotted on the lip. March. Guatemala.

L. DEPPEI.—Yellowish green, brown-spotted petals, white and rose lip. June. Xalapa.

**L. SKINNERI*.—White, rose, or purple flowers, white and purple-spotted or crimson-blotched lip. October, onwards to spring. Guatemala. Of this there are many varieties.

**MAXILLARIA HARRISONI*.—Yellowish white, purple lip. April and May. Brazil.

M. TENUIFOLIA.—Yellow, barred with crimson. June. Mexico.

M. VENUSTA.—Ivory-white, crimson blotch on the lip. April and May. New Granada.

The *Maxillarias* succeed in pots or baskets.

MILTONIA CANOIDA.—Brownish purple, shaded flowers; lip white, marked with rose colour. March. Brazil.

M. CLOWESII.—Yellowish brown cinnamon-blotched petals, white lip with purple base. May.

M. SPECTABILIS.—Creamy white, with the lip streaked and shaded with rosy purple. July.

**ODONTOGLOSSUM ALEXANDREI*.—Purple-shaded petals, red spots on the lip, with purple radiating lines, yellow stain down the centre. April. Bogota.

**O. BICTONIENSE*.—Yellowish flowers barred with brown, purple lip. April. Guatemala.

**O. CITROSUM*.—Racemes of whitish or bluish flowers, white, lilac-purple, or rosy-crimson labellum. March. Guatemala.

**O. CRISTATUM*.—Brown, spotted. Peru.

**O. DAWSONIANUM*.—Rose and crimson. Mexico.

**O. GLORIOSUM*.—Yellow and brown, sometimes white spotted and blotched with purple. New Granada.

**O. GRANDE*.—Bright yellow, barred and blotched with brownish cinnamon. March. Mexico.

**O. INSLEANI*.—Yellow, barred and blotched with cinnamon. July. Mexico.

**O. MACULATUM*.—Yellow, barred and blotched with brown. May. Mexico.

**O. NEUCLOEUM*.—White, cinnamon brown at the base of the petals. Mexico.

**O. PESCATOREI*.—White, streaked or shaded with rose, crimson and yellow at the base of the lip. New Granada. April.

**O. PILCHELLEUM*.—White or yellowish white. June. Guatemala.

Odontoglossums should have the compost rather moist even in winter, and an airy sunny position. They may be kept for weeks without water in winter, but must be examined to see that the pseudobulbs do not shrivel, and a little water should be given as required. The atmosphere must be dry.

ONCIDIUM CARTHAGINENSE.—Yellow flowers in racemes. May and June. Venezuela and New Granada.

**O. CORNIGERUM*.—Spikes of yellow and spotted flowers. July. New Granada.

O. CRISPUM.—Yellow and brown flowers in spikes. June. Brazil.

**O. DIVARICATUM*.—Yellow, spotted and blotched with crimson, in large branching spikes. December. Brazil.

O. ORNITHORHYNCHUM.—Pink and rosy purple flowers, with yellow-based lips, in pendulous branched spikes. July. Mexico.

O. FLEXUOSUM.—Panicles of yellow flowers. June. Brazil.

**O. SPHACELATUM*.—Flowers in panicles, yellow, spotted with brown. March. Mexico.

PHAJUS GRANDIFOLIUS.—Erect racemes of cinnamon-coloured flowers, the labellum white tipped with purple. April. China.

P. WALLICHII.—Orange, brown, and yellow. April. Kooesha.

Soil the same as for the *Calanthes* and *Cypripediums*.

SOERALEIA MACRANTHA.—Rosy-purple flowers on reed-like stems. September. Guatemala.

STANHOPEA BUCCEPHALUS.—Orange yellow, spotted and barred with black. July. Quito.

S. GRAVEOLENS.—Orange and pale yellow; strongly scented. May and June. Guatemala.

O. OCULATA.—Creamy-coloured flowers spotted with purple. June. Mexico.

S. TIGRINA.—Orange yellow, much blotched, chocolate and red. Xalapa.

The *Stanhopeas* require to be grown in baskets, the flowers being pendent, and coming through the sides or bottoms of the baskets.

TRICHOPHILA TORTILIS.—Twisted brownish-pink petals, white lip, blotched with rose colour. February. Mexico.

**ZYGOPETALUM CRINITUM*.—Greenish flowers, blotched with brownish purple, white and purple-striped hairy lip. November. Brazil.

**Z. MACKAYI*.—Greenish flowers blotched with brownish purple, smooth lip blotched with purple. March. Brazil.

Z. MAXILLARE.—Greenish-brown blotched flowers, white lip, shaded with bluish purple in the upper part. September. Brazil.

There are, no doubt, many other Orchids which would succeed as well as those above named, either in cool or warm vineries, but it is better to rest satisfied with a limited number, than to expose plants of doubtful hardiness to an atmosphere in which they will make but little if any progress; for unless the plants are well matured previously in a cool and airy situation, they will not fail to lose every root, and the pseudobulbs will often perish when the plants are taken from a hot and moist house and placed in a cool one. The case is very different with plants which, though grown in a warm moist house are, previous to a trial in a cool house, well matured by exposure to light and air after a good growth has been made, being removed in autumn to the house in which they are expected to make the following year's growth, and wintered there. If left in the warm house during the winter, or in a temperature at night little if at all under that of the minimum day temperature of the house they are removed to, and in which they are expected to make new growths, instead of doing so they will only take a second rest and be in danger of decaying from the moisture and cold. The comparatively high day temperature, and the cool airy atmosphere will serve

to ripen them, and they will not unfrequently start into growth late in summer and autumn when the temperature may not exceed 50° at night. This shows that to secure a good summer growth the plants must be wintered in a low temperature, and until they are so treated they ought not to be placed in a cool house, as the chances are against their succeeding well for a time at least, even if they survive the unnatural transition.—G. ABBEY.

OUT-OF-DOOR GRAPE CULTURE—WINE MANUFACTURE.

(Continued from page 376.)

EXACTLY the same utensils will be required for the making of Rhubarb and Gooseberry wine as for that of the Grape, and I will specify them now. On account of the quantity of Grapes that my Vines now annually produce I have put up a screw winepress, which greatly facilitates my operations; but as nine-tenths of the people for whom I am writing may never possess so desirable an apparatus, I will point out the homely contrivances which are generally found on a cottager's premises, or which can be purchased at a small cost. Of course, all articles to be employed in wine-making should be scrupulously clean and kept perfectly sweet. They are the following—a garden basket, of which the weight is known, to contain the Gooseberries or Grapes when gathering them; weighing scales; a washing bench; two or three large, brown, glazed earthenware pans (I formerly used washing-tubs, but I have discarded these, because they absorbed so much of the saccharine matter), holding about fourteen gallons each; casks of suitable capacity (if brandy casks so much the better), containing say from five to nine gallons each; two two-gallon stone bottles, and two one-gallon bottles; a spouted two-quart jug; a long-spouted two or four-gallon tin can; a pint measure; a galvanized iron lading-bowl; three or four brown, glazed, earthenware milk pans; a large and small tin funnel, a colander, two large wooden spoons, a mallet, a gimlet, a pair of pincers, and a pair of cutting-pliers; bungs, vent-pegs, two boxwood "medicine taps," a stout piece of coarse canvas, trams and wedges to secure the casks with, and a pail and scrubbing brush. If there were in addition a large pestle and mortar, or if these could be borrowed for the operation, the Rhubarb and Gooseberries could be crushed much more easily than with the mallet upon the washing bench or in a tub. A small brewing thermometer and a cheap glass saccharometer would also obviate guesswork.

Rhubarb and Gooseberry may truthfully be termed the poor man's wines, for there can be no difficulty, where a corner of almost any description of soil is to be had, in producing the leafstalks for the one and the fruit for the other. From the middle of June to the beginning of July is the proper time for making them into wine, for then the Gooseberries are just sufficiently soft to take an impression of the finger and thumb without being too ripe, and the stalks of the Rhubarb are of the right age. Each may be made into wine separately; but long practice has convinced me that a mixture of two-thirds by weight of Rhubarb and one-third of Gooseberries is far preferable, for the Gooseberries destroy the mawkishness of the Rhubarb, and the latter softens the asperity of the Gooseberry wine.

Presuming that nine gallons are to be made, a nine-gallon cask and a gallon stone bottle will be wanted, also 42 lbs. of unpeeled Rhubarb stalks, and 21 lbs. of Gooseberries. A few pounds of the latter added, subtracting the same weight of Rhubarb stalks, will not matter if there be a bountiful supply of Gooseberries, but do not curtail the latter by adding a larger proportion of Rhubarb.

Deprive the Rhubarb of its leaves, and if the mere inch or so of the footstalk which was covered by the ground, and the snuffs and stalks of the Gooseberries, be cut and picked off, all the better, though whether this be done or not is not very material; but as soon as possible after gathering and weighing them the Rhubarb stalks should be cut into 2-inch lengths and crushed in a pan. The Gooseberries should then be treated in a similar manner and added to the must, as we shall now have to call it, of the Rhubarb. This crushing, in the absence of a pestle and mortar, may be performed with the mallet on the face of the washing stool, placing immediately beneath the latter a large tub to catch the juice and smashed must. When the bruising is completed the pulp is run into the fermenting pan. Both the Rhubarb and Gooseberries may also be crushed

by a vertical rammer at the bottom of a tub, ladling the must from time to time into the working pan; and it must be noted that crude Rhubarb juice will stain linen with ironmould, therefore some coarse material, as wrapping, would be advisable over all. Pour five gallons of clean water into the pan and stir it well with a wooden spoon, so as to well mix the two musts together; then put a couple of square stakes, or something on which an old blanket can be suspended over the pan. A saccharometer would at this stage be very convenient to prove the specific gravity of the juice, which is done as follows:—Strain about a pint of the juice through the colander, put some into the tin tube of the glass instrument, and plunge the saccharometer in it, when the index will probably float at 4°, or 5°, or more. Note the indication, and then allow the must to remain about twenty-four hours covered with the blanket, in a temperature ranging from 60° to 70° (from 50° to 60° will do), and at the expiration of that time uncover and stir the must again, strain off a little as before, and it will in all probability be seen that it has gained in sweetness a degree or more. Replace the covering, and prove the strength again in twelve hours, and should the sweetness prove greater, or remain at the same degree as at the last proving, all is well, and the must may be allowed to remain twelve hours more; but should the saccharometer denote less sweetness—viz., if the degree on the index-plate is again 4°, it shows that the liquor should be instantly strained off from the must, as its quality is deteriorating, and it would require more sugar to bring it up to its former degree of sweetness. This would be a loss through neglect.

If a winepress is not to be had, the liquor must be pressed off through the colander, made to rest upon the two squared stakes over the pan, and the arms of the operator become as rigid as the stakes, in consequence of the pressing. It would be well to make a mark in the fermenting-pan, to show at once when there are ten gallons in it, as that will be the quantity of liquor required to be measured off before adding the sugar. Should the quantity not come up to the mark on the first straining, add more water at a temperature of 80° to the pressed must; stir it well, and strain it off into the pan until the contents of the latter measure ten gallons. Prove the strength again with the saccharometer, note it, and add 32 lbs. of the best loaf sugar, along with 4 ozs. of powdered red argol procured from the chemist's, which imparts keeping properties wanting in all wines of this description, excepting that of the ripe Grape. Two or three lbs. of honey added also to the liquor at this time soften it, and tend to make it effervescent like Champagne. Should this be decided upon, not quite so much sugar would be required—say 30 lbs. After the sugar is dissolved, the saccharometer should float at 40°. The above proportions of 30 lbs. of sugar and 3 lbs. of honey, would by guesswork, in every probability, bring the ten gallons of liquor up to this degree of sweetness, or they might not, though the difference one way or the other need not cause any feeling of distrust. Nevertheless, on the supposition that we were making fifty gallons of the wine, the value of the sugar added by guess in excess of that required, would probably more than pay for the instrument; or, on the other hand, from the want of sufficient sugar, the wine might be found unpalatable. Hence the value of the instrument as a guide. I believe I use more sugar in my practice than many of our best wine makers recommend. I have tried less quantities according to the receipts of others, and I have invariably found that I was obliged eventually, in order to give body, and to please the English palate, to add an amount of sugar more than equal to that which I have recommended above; for the wines would so attenuate themselves in the cask, that if I had not kept on adding dissolved loaf sugar to keep up the gravity, they would have drunk miserably thin, or possibly acetous fermentation would have set in, and the result would have been vinegar. I find, besides, that it is never satisfactory to have to apply much sugar to keep up a standard of sweetness in these wines after the liquor has finished its fermentation, and been fined off. In short, if the wines do not contain sufficient sugar at first, they cannot be sweetened properly afterwards, although slight additions of sugar (the saccharometer will show us when they are necessary) to give body, when the wines are allowed to remain in the casks unbottled above a year, will be always advisable to please those who do not like what are called "dry wines." If, on the other hand, the young liquor is too much sweetened at first, it would remain overloaded with unfermented sugar, and a clouded appearance, a mawkish taste, and pricking upon the palate, will be the consequences. These evils cannot afterwards

be remedied, and hit-or-miss modes of proceeding have greatly tended to bring our English wines into bad repute.

I trust I am not becoming tedious, but I feel I am writing for beginners, and that I must enter into full particulars in order to suit all persons who may feel interested in the subject, and I think I cannot do better now than give a digest of the manner in which I operated last year, as being my best practice up to the present time.

DROEST, 1868.—Made forty gallons of Rhubarb and Gooseberry wine.

July 3rd. Gathered 200 lbs. of Rhubarb and 80 lbs. of Gooseberries. I could not obtain 100 lbs. of the latter, otherwise I should have preferred that weight.

July 4th. Crushed the Rhubarb and Gooseberries with a large pestle and mortar; entered the juice into the working-pans, and added 6 gallons of clean water at a temperature of 60° to the must. The saccharometer indexed 7° of natural sweetness. Covered the must with old blanketing in a temperature of between 60° and 70°.

July 6th, saccharometer 7½°. July 7th, 8°. July 8th, 7½°. Pressed-off the juice through a winepress, and it ran 29½ gallons. Put immediately 12 gallons of water, at a temperature of 80°, to the strained must, stirred well, and then pressed off. The liquid produced measured 10½ gallons; put it to the first runnings, making a total of 40 gallons of crude juice and water, in which the saccharometer floated at 3°. Dissolved 7½ lbs. of honey, which brought the saccharometer up to 5½°; then stirred into the liquor ½ lb. of red argol and 130 lbs. of loaf sugar, which, when quite dissolved, brought the specific gravity up to 44°. I first dissolved only 120 lbs. of sugar, and felt my way to 4½° of gravity by adding the rest by degrees. Covered the whole over as before in a temperature of from 55° to 60°.

July 9th. Fermentation beginning; saccharometer 44½°. July 10th, sac. 45½°; 11th, sac. 44°; 12th, sac. 41½°; 13th, sac. 38½°; 14th, sac. 33½°; 15th, sac. 25°. Put the liquor into the barrels in the cellar. July 18th, sac. 18°.

July 28th, sac. 14°. Racked-off the wine and rinsed-out the grounds; sulphured the barrels to check the fermentation, returned the wine into the casks, and stirred in finings.

August 3rd, sac. 12½°; 9th, sac. 12°.

October 5th, sac. 10½°. Racked again, and rinsed grounds from casks. No sulphuring nor finings this time.

November 18th, sac. 10°. Plain-racked again. Wine becoming very fine, and fermentation quite ceased. Put a piece of canvas over the bung-hole, and knocked down the bung and vent-peg air-tight.

March 11th, 1869. Bottled the wine, sac. 10°.

May 20th. "Cracked" a bottle of it before writing this. It is already sparkling and beautifully bright. This wine is greatly improved by being kept a year in bottle, and is what I consider at its best at two years of age; nevertheless I have wines of this description bottled in 1857 and successive years, and they would puzzle some very good judges.

It seems that in my hurry to proceed, I have neglected to mention how to place the cask in the cellar, and for the convenience of racking-off I advise the boxwood tap to be first driven into the cask, to set the latter on the skeleton tram, and secure it firmly by means of wooden wedges, with its bung-hole leaning slightly to one side, in order to allow of the scum running down into a milk pan placed under the tram. At this stage the necessity of the spare gallon of liquor will be evident from the constant filling-up which the barrel will require as fermentation goes on.

It must now be determined whether the wine is to be drawn from the cask and drunk as a still wine, or bottled in March to become an effervescent beverage. In the latter case the saccharometer must never be neglected; constantly prove the gravity by dipping the instrument in the liquor at the bung-hole, and when the indication is 14° place the working-pan under the tap, and draw off the liquor, gently tilting the barrel when it begins to run slowly, so as leave the thickest of the sediment behind. The latter should be turned into a milk pan, and the cask rinsed out with a little of the wine (never use water for the purpose), then sulphur the cask thus:—Turn the barrel bung-hole downwards, and fix it in that position; then on the end of an old iron spoon place a good pinch of flowers of sulphur, set light to it with a candle, place the lighted sulphur at the bung-hole, and allow the fumes to enter the barrel till combustion ceases. After doing this, instantly replace the cask firmly and level on the tram, enter the wine into it, and the sulphurous acid which the cask contains will check fermentation, aided by the finings which are now to be stirred into the liquor. To

make the finings a day or so previously to their being required for use, put a quarter of an ounce of isinglass in about half a pint of the wine, the older the wine the better, but new wine will do. Stir the liquid occasionally till the isinglass is found to be quite dissolved, then add a pint more wine to it, mix well, and quietly pour it in at the bung-hole from a spouted jug with one hand, and with the other keep gently stirring half-way down the barrel with a lath. A piece of brown paper may now be pasted over the bung-hole with the wine's own yeast, or the bung may be put in slightly, but leave out the vent-peg, and in all probability fermentation will now nearly if not quite cease. Continue to prove the wine by the saccharometer, as mentioned in the digest, and if it still work, persevere in racking it, and it may be fined with isinglass once more, though not sulphured; but should attenuation go below 10°, dissolve a little loaf sugar in the liquor to keep it up to that mark. As soon as the settlings in the milk pans from the rackings have fined themselves down, run off the clear liquid into the gallon stone bottle, or, if there is room for it, enter it into the cask with the rest, and throw the residuum on the manure heap, or give it to the roses, which will relish it much, and produce blossoms as big as breakfast saucers.

I will describe the bottling in due time; but as regards the honey, I may state that if it is of bad colour, or otherwise foul from being taken out of the body of an old hive, instead of being virgin honey taken from a glass super, the mode of preparation which I adopt before adding it to the liquor is to put a quarter of a pound of water to every quarter of a pound of honey in a stewpan over a bright fire, gently simmer it for twenty minutes, skimming off the scum as it rises, and then allow the clarified honey to become cool.

By scientific men, Thompson's saccharometer would in all probability be the expensive instrument used to ascertain the specific gravity, therefore we must be careful to multiply the degrees on our simpler instrument by 5—viz., 4½° multiplied by 5 will be 22½° on the scale of Thompson's instrument.—UPWARDS AND ONWARDS.

(To be continued.)

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CEREUS LIVIDUS (Livid Cereus). *Nat. ord.*, Cactaceæ. *Limn.*, Icosandria Monogynia.—This is a columnar Cactus, 12 feet high, and from 4 to 6 inches in diameter. Flowers white, 10 inches in diameter. Native of Brazil, La Guayra, and Curaçoa.—(*Bot. Mag.*, t. 5775.)

CROCUS ORPHANIDIS (Professor Orphanides' Crocus). *Nat. ord.*, Iridaceæ. *Limn.*, Triandria Monogynia.—Very beautiful, native of Greece. Flowers more than 2 inches in diameter, lilac blue, unveined, throat yellow. They blossomed in a cool frame at Kew during November.—(*Ibid.*, t. 5776.)

PELAGONIUM SCHOTTII (Dr. Schott's Pelargonium). *Nat. ord.*, Geraniaceæ. *Limn.*, Monadelphia Decandria.—A garden hybrid, nearly allied to *P. charophyllum*, which had for its parent *P. fulgidum*, fertilised by the pollen of *P. sanguineum*. Flowers crimson, with an elongated black blotch on each petal.—(*Ibid.*, t. 5777.)

ODONTOGLOSSUM KRAMERI (Kramer's Odonoglossot). *Nat. ord.*, Orchidaceæ. *Limn.*, Gynandria Monandria.—Native of Costa Rica. Introduced by Messrs. Veitch & Sons. "Like its congeners, it flourishes under cool treatment." Flowers freely and enduringly, and is exquisitely delicate in the purple tints on its otherwise white flowers.—(*Ibid.*, t. 5778.)

PLUMERIA LUTEA (Yellow Plumeria). *Nat. ord.*, Apocynaceæ. *Limn.*, Pentandria Monogynia.—Native of Peru. A fine branching 7-foot-high plant, flowering abundantly in June in the Kew Palm house. Flowers 4 inches in diameter, sweet-scented, very pale pink, yellow at the base of the petals.—(*Ibid.*, t. 5779.)

GLADIOLUS CRENTUS (Blood-coloured Gladiolus). *Nat. ord.*, Iridaceæ. *Limn.*, Triandria Monogynia.—"A very beautiful and entirely novel species. It was received from Natal by Mr. Bull, of Chelsea, with whom it flowered during the past summer. It is not only a very showy plant, but also one of a very distinct character, and we believe it will be welcomed as a grand acquisition for the flower garden, on account of its vigorous habit of growth, and its large brilliantly-coloured flowers. It will, probably, be also of great value to the hybridiser, and may be expected to impart some novelty of feature to the popular varieties of this favourite flower. As a species it is

remarkable for its almost regular perianth, with blunt emarginate segments, but it has entirely the habit and aspect of the ordinary garden varieties of *Gladiolus*.

"The plant produces a tall scape, 3 feet high or upwards, furnished with long flag-like glaucous leaves, nearly an inch wide, the scape terminating in a distichous spike of about a dozen large broadly campanulate subrigent flowers of a bright blood-red colour, the segments of which are obovate or oblong-spatulate, and emarginate, the upper ones being more prominent, somewhat larger than the lower, and uniformly coloured, while the lower smaller ones are somewhat recurved, crimson at the base, and scarlet at the apex. The two lateral ones of the lower lip are marked about half-way down with a white zone dotted with crimson, which on the exterior edge runs out into a long point, like the flame of the florists' Tulip. The base of the segments, where they pass into the slender tube, is marbled with yellowish green. The stamens have red filaments, supporting linear purple anthers."—(*Florist and Pomologist*, 3rd s., ii., 121)

CULTURE OF HEATHS.

In offering a few hints on the culture of Heaths, it is necessary to remark that, where it is at all possible, a house should be devoted to them, which should be span-roofed, well lighted, most efficiently ventilated, and so constructed that the plants can be kept near the glass. As in nine cases out of ten, however, such accommodation cannot be had, they should have a portion of the greenhouse allotted to them separate from the general collection, or at least among such hard-wooded plants as require similar treatment. The proper soil is pure peat, with the addition of more or less sand, according to the quality of the peat, whether naturally sandy or otherwise. The best for the purpose is obtained from hillsides or dry moors, and from spots where the wild Heath is found growing luxuriantly, and without being associated with grass or reeds, cutting the turf or sod about 4 inches deep, choosing the winter season for the purpose, as the worms are then below the top spit for protection from frost. The turf should be chopped up with the spade and thoroughly dried before using. As a general rule, from the beginning to the middle of May is the best season for shifting; and in this operation it should be borne in mind that the hard-wooded sorts, such as *Massoni*, *aristata*, and *tricolor*, are found naturally growing in dry situations, in a soil largely composed of the debris of coarse sandstone rocks; while the soft-wooded, such as *hyemalis*, *colorans*, and *Linnæoides*, are for the most part found in damper situations, with less sand among the soil. In potting, therefore, the hard-wooded sorts should not only have more drainage, but a larger allowance of sand, than such as are soft-wooded and more robust in their habit.

All the kinds delight in charcoal, and small pieces incorporated with the soil and among the crocks will be found beneficial; the roots penetrate it freely, and it has the effect of absorbing any superabundance of moisture.

Thorough drainage is of the utmost importance, and from 1½ to 3 inches of crocks should be allowed, according to the size of the pot and the kind of plant, placing a layer of rough fibry peat over them.

In potting, the ball should not be buried deeper than to allow a very thin sprinkling of fresh soil over the surface, and the soil pressed firmly round the sides. If the soil is thoroughly dry, it can scarcely be too firm. Nothing is more fatal to Heaths than loose potting; the water is absorbed by the soft peat, the old ball gradually loses its moisture, and the plant soon becomes unhealthy. An essential condition to the successful culture of Cape Heaths is careful watering. No plant is more impatient of either excessive drought or moisture. Over-watering soon shows its effects by the foliage getting discoloured and dropping off, the result of the soured soil gradually rotting the roots; while a thorough parching is almost always fatal; and even when the plant does survive, it is seldom that any after-treatment will compensate for the shock it sustains. The safest will be the medium, giving water copiously during the growing season, and that only when it is seen to be wanted, and gradually reducing the allowance as winter advances, at which season special care must be exercised.

Early in June they may be placed out of doors in a sheltered situation, and where it is possible, plunged to the brims of the pots in sand or ashes, taking care that complete provision is made against worms, which are very troublesome, deranging the drainage and perforating the balls, so that it is impossible to do them proper justice in watering.

In hot summer weather, whether in the greenhouse or out of doors, they should be syringed overhead night and morning, before and after the sun. In autumn and winter, and even in long-continued wet or dull weather in summer, all the sorts are liable to mildew; and whenever the faintest symptom of this enemy is perceived, no time should be lost in applying the sulphur puff, before which it will rapidly disappear; and even though it should not be noticed, a very gentle dusting occasionally in the course of the winter will prevent, which, in this case, is emphatically better than cure. Many fine specimens are ruined by the neglect of this simple precaution; and mildew is so insidious, that very often its work is done before its presence is detected.

Immediately after the bloom is passed they may be pruned or pinched, so as to keep the specimens in shape. All the sorts require this to be done regularly, and some of the soft-wooded, such as *hyemalis*, are much the better of being well cut in.

In arranging the plants in the greenhouse, each should have sufficient space to allow the light and air to penetrate all round them. Air should be admitted freely, except in very hard frost, and no more fire heat should be given but what is absolutely necessary to keep the temperature just above the freezing-point. In point of fact, most Heaths will stand 3° or 4° of frost without apparent injury. I am convinced, however, that the safest course is to keep it out altogether.

I append a select list of fine varieties arranged according to their ordinary seasons of flowering:—

I. Winter and Spring.

<i>Grandinosa autumnalis</i>	<i>Macanthura</i>
<i>Princeps carnea</i>	<i>Lamproloma rosea</i>
<i>Vernix coccinea</i>	<i>Wilmoreana</i>
<i>Gracilis vernalis</i>	<i>Gracilis autumnalis</i>
<i>Hyemalis</i>	<i>Ilegeminaus</i>
<i>Sindryana</i>	<i>Sponcerii</i>
<i>Colorans</i>	

2. April to July.

<i>Massoni major</i>	<i>Ventricosa grandiflora</i>
<i>Parmentieriana rosea</i>	<i>Ventricosa globosa</i>
<i>Vestita coccinea</i>	<i>Candolliana</i>
<i>Vestita coccinea minor</i>	<i>Fairlieana</i>
<i>Ventricosa concusca</i>	<i>Delecta</i>
<i>Emula</i>	<i>Hartwelli</i>
<i>Eximia</i>	<i>Profusa</i>
<i>Victoria</i>	<i>Shannoniana</i>
<i>Aristata major</i>	<i>Shannoniana Turnbullii</i>
<i>Cavendishii</i>	<i>Ventricosa Botwelliana alba</i>
<i>Ombata umbellata</i>	<i>Ventricosa densa carnea</i>
<i>Persoluta alba</i>	<i>Devoniana</i>
<i>Vestita alba</i>	<i>Infata</i>

3. Autumn.

<i>Aitoniana Turnbullii</i>	<i>Corinthoides coronata</i>
<i>Eweriana superba</i>	<i>Macnabiana rosea</i>
<i>Verticillata major</i>	<i>Mammosa pallida</i>
<i>Marnockiana</i>	<i>Amabilis</i>
<i>Ampullacea</i>	<i>Ampullacea carnea</i>
<i>Austiniana</i>	<i>Jasminiflora</i>
<i>Jasminiflora alba</i>	<i>Rotunda major</i>

—(*The Gardener*).

OUR SPARROWS.

"I SHALL give it up now, and let the sparrows have it all their own way; they very nearly have it both in garden and orchard. There is no good in toiling and spending for next to nothing. Talk about sowing seeds half for the birds and half for use! our English sparrows are not content with that, they take the lion's share, and no mistake; they are greedy beyond measure, there is no working with them; it is at best a long hard battle in which they are sure to gain the victory, so I might as well fold my arms, bask in the sunshine, and save my money and strength for other work." So said the new owner of The Grange as he sat down the second time to his breakfast, having rushed out to frighten a number of birds from his Radish beds.

"We always have a great many sparrows in spring," replied his wife.

"I do not know when we are without them, spring or autumn. I wonder if they ever die of old age. I think they must outlive the raven, even if they do at last yield to old age. It is certain if their numbers increase at the rate they have done the last few years, there will be a famico in the land. The amount of mischief they do is incalculable; they have pulled up five rows of Peas, each row containing more than a quart, and completely destroyed them; and you might gather up handfuls of little white Radishes left on the soil to die. And

that grand Mustard-seed sowing of yours, in which I was to read my name in growing letters, might with less trouble and equal result have been a thin broadcast. There is no relief from them at any time or place, for they are everywhere; they are on the housetop with their quarrelsome twitter, they are round the chimneys, and last, not least, in the spouts; not a thunderstorm comes, or a heavy rain, but the spouts are choked-up with the straws and rubbish of the nests they are constructing. I paid last year upwards of £2 for clearing spouts out at different times. All the gardens and orchards appear to be theirs by right, they are on every fruit tree picking-off the buds, under the pretence of seeking caterpillars long before they make their appearance. You never find them going near the Gooseberry bushes when these are half-dead with the ravages of the caterpillars of the magpie moth. I have lived where there was a garden all my time, yet never met with a family of sparrows that would have anything to do with them; had they done it but once in ten years they would have atoned in a small measure for the loss they cause. I have known them shell Peas, and be very happy all the time, and that very near to old women who were paid for picking off the caterpillars the sparrows might have eaten."

"I have heard, Harry, those caterpillars are very bitter to the taste, and much too dark to be relished as food."

"Not much darker than the fruit buds they peck at during the winter months, until, when spring comes, there is no blossom to open; and then the nps and downs they make in every fresh-done-up border, the spoiling of early flowers—the work and the disappointment they thus cause are dreadful to contemplate. Of all birds they are the most determined; any hideous scarecrow you put up will only frighten for a short time; even the painted tin eat running up and down the border is soon of little worth, its very silence assures the old sparrows it cannot harm. Why, a rook will tremble at the sight of a gun, and be scared for a week by the smell of gunpowder; but those home-birds look down from their upper heights without fear or trembling, and chirp, chirp, until one is weary of hearing them."

"Why do you not shoot them, Harry?"

"And riddle somebody's new crochet quilt, as I did when a lad, and had to pay damages. They are not worth the cost of shot."

"Perhaps what they destroy is; but, then, you do not care for small game. I daresay, Harry, a rook is a better mark to hit than a sparrow."

"More in the bulk, it is true, Clara. I declare, there they are again; I will just give them one more fluster before they have it all their own way. I do believe they consider we put out the seeds to soak for their especial benefit."

"Why do you not do, Papa, as Uncle Archie does?" said one of my wingless chicks; "he gives them bitter grain to eat."

"Poisoned wheat, does he? I am not sure we should use it for such a purpose, and it is no easy matter to become possessed of the bitter, I know by experience; there is too much witnessing and book-signing for me. I have tried to purchase it more than once or twice, and failed; somehow I could not manage it—I suppose every man is a coward at some point or other; weakened by a soft place in the brain or the heel, I comfort myself with thinking that after all it is a mean way of ridding oneself of a nuisance. I have run out of nearly every druggist's shop in the town, after getting up my courage to enter, for as soon as I name the deadly ingredient I desire, the shopmen eye me with a queer pitying look, as if quite sure I had lost something, and they shake their heads and mutter in low words about their inability to believe it is only for birds. Once my heart beat very fast, for I thought sure enough I was going to gain my end, for the shopman asked me no questions, but weighed, and folded up, and sealed, and labelled with big letters 'Deadly poison'; but when I offered the money more than the cost, yet fully determined to wait for no change he coolly asked, 'Where is your witness?' 'Witness, man! What do you mean?' 'Some one to say you are going to make a right use of this—are in your right —.' Oh! Clara, I assure you, I dashed out of the place at a speed I have never tested since my courting days. I never walk down that street unless compelled, then I keep on the other side. I do not think I shall ever summon up strength of mind to go into a medicine shop again, so I hope you will not take the fancy to be ill."

"I am very glad you could not purchase it, I could not sleep with poison in the house, some accident would have been sure to have been the result. I should have been giving it to the children, thinking it was arrowroot."

"Well, then, the sparrows must have their day, live on at our cost. The sixth row of Peas is disappearing fast; should any stray Pea manage to escape, and live on to fruiting time, I must engage farmer Thompson's boy with the rattle to keep away the pilferers, or there will be nothing left for me but empty pods. To think of our brothers on the other side of the world importing sparrows; they little know what they are doing. I wish they had all ours; they are great feeders and little workers, and we could well do without them. The worst of the matter is there is no making a noise about them, or resorting to any method of extermination, or there will be an Act of Parliament in no time for their protection."

"I think when you sow seeds you are niggard, not thinking about the birds, or the probable number of old seeds which may have been mixed up with the new, so the poor sparrows are blamed for more harm than they do; and every loss or failure is easily accounted for when the birds are out of favour."

"Certainly, Clara, I have not your weakness for everything wearing feathers, or I might be blind to their evil deeds; and as for not sowing plenty of seed, I usually take the quantity I should use if we were not blessed with such a colony of sparrows, then double the measure; surely that is enough. I do not believe our gardens have a worse enemy, it is peck, peck, all the day long at something or other, no matter what. Pull them rudely out of a flooded spouting, and they will straightway go and build in another; drive them away with fluttering rags or strips of paper from the tender growth of one bed, and they will drop down all the more keenly on some undefended portion. I have seen them tramp upon netting spread over a bed of Crocuses until they could reach the flowers, then begin in earnest the work of destruction, and but few would be left untouched a few hours afterwards. If I were Flora's gardener I would wage terrible war against them."

"And yet you will not have the blackbird or the thrush driven away, and I am sure they make sad work with our Cherries and Strawberries?"

"Oh! but for months in the year they are quiet workers, picking up worms and slugs. They well earn a right to some little portion of our sweets, and we can better spare fruit than vegetables—but the sparrow, I am slow to believe he is of any good."—MARN.

NOTES AND GLEANINGS.

It is with regret we have to announce that already symptoms of the POTATO DISEASE have appeared. Mr. Ronald, nurseryman, of Chichester, sent examples of it to the meeting of the Royal Horticultural Society on Tuesday, and in a communication on the subject, he says:—"The Potato disease first showed itself here on the 31st of May. On the first spot the sets had been left in the ground all winter, and were taken up and replanted on the same day, the sort being the Lapstone Kidney. Others planted at the same time and beside them are not yet affected. These had been laid thinly in a loft all winter."

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time to apply salt to *Asparagus* and *Sea-kale* beds; about a pound to a square yard is sufficient. It is a waste to apply it after the plants have done growing, particularly when the soil is at all inclined to be cold and stiff. Stimulants applied now will enable the plants to lay up a good store of organised matter for another season, and therefore in addition to salt, occasional applications of liquid manure should be made. The effect of this treatment will be perceived in the autumn, for the plants will retain their green colour much longer than others not so treated. The planting-out of *Broccoli*, *Winter Greens*, *Cabbages*, *Cauliflowers*, &c., must be vigorously prosecuted, and every vacant space should now be kept well filled up. Liquid manure will be in continual request. *Celery*, the trenches for the main crops should now be prepared; the spaces between the rows of Peas are very suitable. The shade from the Peas will be very useful to the *Celery* in its earliest stages, and they will be entirely removed by the time they are likely to be injurious. Continue to top *Peas* and *Beans* as they advance, and keep them well gathered as they become fit for table. Another sowing of *Dwarf Kidney Beans* may be put in for succession, and advancing crops of these and *Scarlet Runners* should be well thinned-out. Continue to make occasional sowings of *Lettuces*; the *White Silisian* for stewing, and the *Bath Cos*, *Paris Cos*, and *Green*

Cos for salads. Keep Turnips well thinned-out, and watered when needful. See that Tomatoes are well thinned-out and kept nailed to the walls.

FRUIT GARDEN.

Strawberries will now require timely applications of water, according to the state of the weather; and the fruit must be protected from birds. The nailing of the young wood of wall trees must be continually followed up. Lay-in the shoots of Apricot and other wall trees while the wood is pliable. Continue to stop and destroy superfluous shoots on the trained Pear trees; many shoots may be twisted or broken short about half-way up. The opinions of practical men are divided as to whether partial or entire removal is the better. I incline to the idea that the breastwood of Pears should now be broken off within a few joints of the base, carefully retaining the leaves; of course a due supply of young shoots must be laid in to fill up all present or prospective vacancies.

FLOWER GARDEN.

Evergreens in general will have now ceased shedding their leaves for awhile, and a more general cleaning than usual should now take place in dressed grounds. Herbaceous plants will now require a thorough staking; do not form the plants like besoms, but use sticks enough, sometimes three or four to a plant. Remember the late Mr. London's directions: Let no two plants touch, if possible. Grass and Box edgings should be clipped and trimmed, the latter during damp weather. Follow the progress of climbers with the necessary attention. Propagate Pinks, China Roses, and Double Rockets. Let a goodly number of Pansy cuttings be put in. Ranunculuses, Tulips, and Hyacinths should now be taken up, and, after the bulbs are dried, stored in some dry room. The bulbs which are planted in the borders, and which add so much to the beauty and lively appearance of the flower garden and shrubbery during the spring months, should now receive attention. An acquaintance with the different species will direct the cultivator in his operations. Some species, for instance, form new bulbs beside the old ones, and in course of time become so crowded as to be weak and cease to flower; others form their new bulbs under the old ones, and at last become so deep, that the same result follows; others, again, form their new bulbs over the old ones, and the former appear above the surface of the ground, when they are destroyed by the hoe, the rake, or frost.

GREENHOUSE AND CONSERVATORY.

As the beauty of many of the plants in these is of short duration, care must be taken to insure a constant succession of plants in bloom until frost set in, when Chrysanthemums, Camellias, Chinese Primroses, and several other midwinter flowers may be introduced, to be followed by the forced flowers of returning spring. Those who keep a sharp eye on such matters, will always take care to have a sufficient surplus stock after the bedding-out is completed, to provide against gaps in the flower garden, and to supply the in-door wants. All spring-propagated plants remaining in store pots should be potted-off forthwith, and placed on or plunged in ashes in a spot sheltered from the winds. Balsams, Cockscumbs, and other tender annuals for succession, should receive their last shift before they become pot-bound, and plenty of the Achimenes family should be potted-off, some in large masses. A number of the best Scarlet Pelargoniums ought to be selected for flowering next winter. These should be grown rapidly, and frequently stopped. Towards August they will become rather pot-bound; they must not, however, be shifted, but merely hardened in a very exposed situation until the end of September, in order to have them sturdy and very short-jointed. If placed on a light and warm shelf near the glass, they will be objects of great interest all winter. The Hybrid Perpetual, Bourbon, and Tea Roses, which have been cut from all the spring, should now be compelled to rest. They should be placed in a somewhat shady situation, and all disposition to break into young buds should be carefully checked. They may remain thus for a month, when they should be taken out of their pots, partially disrooted, and repotted in fresh compost. By September the new pots will be filled with fresh roots, and, under good management, the plants will bloom for the greater part of the winter. Let Fuchsias have ample supplies of water, and provide succession stock. The early-flowering Pelargoniums, now rather exhausted, should have the bulk of their tops removed, and made into cuttings. The old stools may be thrown on their sides in a shady situation until they break buds half an inch long, when they may be disrooted and repotted in rather smaller pots. Cinerarias going out of bloom may be put in an

old frame or pit and fumigated; they may then be cut down and turned out in a raised bed in the garden. They will there feed and produce an abundance of suckers by a little attention to watering, &c. Cacti may be removed from the stove, shifted, placed in a cold pit, and supplied liberally with moisture.

STOVE.

Frequent syringings, in addition to moistening the floors and other surfaces, will be needful for the ordinary stove stock. Some of the Orchids will now require a little assistance in the way of "topping up," and a watchful eye must be kept for insects. Propagate *Isotria medeolae* by cuttings. Gesneras, Achimenes, and Begonias should be shifted for succession. Avoid watering plants which are not in active growth. Look well over the now nearly-blooming Stanhopeas and Oncidiums, lest any snails should be concealed. With regard to the Orchids, some little moderation is necessary, especially when the weather suddenly changes from a sunny to a cloudy character.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE hot sun after the showery weather has brought on most crops well; but in addition to plenty of small weeds springing up, the stiff soil became caked, and was beginning to crack in all directions, rendering plenty of surface stirring with the hoe and light steel fork necessary among growing crops. Potatoes that were rather shallow-planted, owing to the wetness of the soil, have had a slight earthing-up. In general, we consider that nothing is gained by this practice, but that on the contrary if planted from 6 to 8 inches deep, the tubers come to maturity earlier, without the earthing-up. All of ours under glass and other protection have been good, and free from disease.

Mice and Rats.—The former have been troublesome, and the latter very destructive to our Peas. We reseed some rows lately, and found on examining them not a single sound Pea, though these had been heavily red-leaded. We are thus forced to come to the conclusion that the red lead does not at all deter the rat; and though we have trapped numbers, there seems to be no diminution in their depredations, and we find, as yet, no trace of their suffering from the lead. In most cases, however, they have cleared us out, just when the little shoot would be about half an inch in length, and the seed soft and sweet, which enables them, in many cases, to leave the outer skin of the Pea, though in others all seemed to have been devoured. As we caught many mice and sparrows, we did not blame the rats so much until we found their excrements. Pheasants though plentiful could not in this case have injured us, as the rows were covered with wire netting, as weekly advertised, 2 feet wide, and with 2½ inch meshes, placed in semi-circular fashion over the row, so that the pheasant may put his neck through the meshes without being able to reach the Peas, and with no risk of hanging itself, which it might do, if twine netting were used. For this purpose wire netting is very useful and economical, and with ordinary care appears to be very lasting. Without some such means of protection, sowing Peas with us would be only a waste of seed, except so far as feeding game is concerned. Wire netting such as the above is of no use as a protection from mice, rats, and small birds. We used to consider ourselves safe when the Peas were 2 inches in height; but it is not uncommon to find top and bottom cleared now after they are 3 or more inches in height. Our earlier sowings of red-leaded Peas were untouched at bottom, though a little pecked by birds on the top. It is the first time in our experience, that seeds damped and leaded have thus been cleared out. Of Broad Beans and Kidney Beans so treated none have been meddled with. We may here mention, that for birds and mice, no trap is better than the wooden figure-four trap with a heavy brick over it, as then whatever is caught dies directly, and thus one objection is dispensed with against the prolonged cruelty involved in trapping in general. In sowing Peas and Broad Beans for the last time, in addition to the above precautions, we ran a small cord of tar on the ground all round the rows; but that as soon as dry was no deterrent to the rats, though smelling strongly. We believe a string saturated with tar and oil to keep it moist, and kept near the ground, would have been more effectual. In setting iron traps, much depends on the trapper having a light hand, as the trap should be very slightly concealed with earth. No taint of the hand should be left behind, and this is best effected by wearing a glove. After all some men will rarely succeed, whilst others

will as rarely fail, and that though both seem equally careful. It is best to abstain from poison, except in shut-up places, as even if put in secure places, it is apt to be carried out and partaken of by animals for whom it was not intended.

In sowing Peas now, it is well to have the ground well pulverised and manured, and the Peas sown in a rather deep wide opening or trench, so that with the usual covering the Peas will still grow in a hollow, which will permit of watering more easily if the autumn should be dry. As intimated above, the last Broad Beans, even of the Mazagan kinds, should be planted by the middle of the month. Most of the good Marrows will do if sown by the middle of the month and well treated; but later in the month the earlier kinds should chiefly be used.

Sowed successions of Lettuces, Endive, Turnips, Radishes, and Spinach, and dug down the Winter Spinach, which has done good service, to make room for other things. Sowed more Coleworts, and pricked out quantities of Brussels Sprouts and Winter Greens to be lifted again, as our ground is too full as yet to give them place. Sowed also Onions and Carrots for drawing young, and thinned Onions, Carrots, and Parsnips. One piece of C roots is rather thin, but in another they came up thickly enough to have stocked many gardens, if they could have been transplanted, and yet the two pieces were sown within a month of each other. Carrots, even of the long kinds, sown now in well-pulverised soil, will yield young sweet roots in the autumn—sweeter than, though not so large as spring-sown ones, and therefore useful for many purposes. These late and smaller roots rarely exhibit marks of spot or worms, and therefore when served whole look tempting in the dish. Watered Cauliflowers coming in well, and pricked out a lot for what will be the fourth succession, and there are two sets coming behind them. The last one will be in just before frost may be expected.

FRUIT GARDEN.

We find we shall not have nearly so much fruit as we expected, as with the exception of Cherries, much of the stone fruit has dropped. We expected this to a great extent, but not to so great a degree as has taken place; and it will be recollected we said as much in the spring, attributing the unsatisfactory state of the wood to the dryness of last summer and then the late growth in autumn. For more than two months we were almost at the mercy of a scorching sun, and just kept trees under glass, as Peaches, under drying off entirely, as well as losing the fine crops, by using strong house sewage—far too strong for the purpose, but we could obtain no clean water to dilute it with. For about six weeks we saved our Celery by keeping it shaded from sunlight. We hope never to pass through such another season, unless we have a large reservoir in which the rain water is stored up, instead of finding its way into ditches, &c., there to give off its fetid exhalations. Even the least observant could not help looking to the result in the following season. Our heavily laden dwarf Apple and Pear trees suffered perhaps the least last year, as they were heavily mulched to keep the heat and dryness out; but some of the trees have an unhealthy tinge this season, are making but little wood, and though the blossom was large and fine, much of it was defective, and numbers of the fruit dropped at, and shortly after setting time.

Of Raspberries, though some rows are good, yet others have suffered severely, the canes first breaking weakly, and then many giving way altogether, and in such cases the young growth is not so strong as usual. Even though these were roughly mulched last summer, we had apprehensions that the plants would suffer from the great heat and dryness. They had no chance, except where moisture could either be put in the ground, or kept in it about the roots.

As respects Strawberries, though we have had fair gatherings from forced plants, yet they have not been so fine and plentiful as usual, especially the earliest crops. The later ones have succeeded better, even late-potted plants from runners pushed out late doing tolerably well; but the partial decline as to bearing we attribute to the season being so far advanced before we had any chance of taking runners for potting. The same cause has affected the main crops, many rows of which were so scorched up, as not to have a green leaf on them until the late rains came and caused them to grow and become green again, almost as quickly as the burned-up lawn. The second growth, however, was more imperfectly matured than usual, and though we had a fair show of bloom, it was not in the quantities we used to have it; and, on the whole, the setting has not been good. Few Strawberries suffer from drought so much as that useful kind for preserving, Cuthill's Black Prince. We had a fine border of young plants that produced heavily last season;

but even those which lived through the drought are puny, compared to what they ought to be; and there are blanks in the border which are not worth covering or protecting. No winter could have been more suitable for the plants, but the mischief was done before the winter came.

To assist the general crops, as the ground was becoming dry on the surface, it was slightly forked over, just to break the surface and destroy incipient weeds, and a little soot being strewn near the plants, the ground was covered close up to the stems with long litter for the trusses to rest upon, and then we gave the plants a good watering. A falling barometer leads us to expect rain ere long, which will wash and clean the litter before the berries ripen, as we have only a few colouring on a south bank, but will have plenty for some time under glass; the latest being merely in a cold pit planted out. We prefer clean wheaten straw, but the stable litter, well shaken, costs little or nothing. Long grass, cut before the seeds approach maturity, answers very well; but short grass is about the worst to be used, as it is driven into the fruit, encourages moulding when damp, and is sore to carpet the place with daisies and other weeds. Tan is a very good material when used fresh. With the plants and flower trusses of the usual strength, we found nothing better than running a string with some sticks on each side of the row, which kept the fruit from touching the ground. Whatever plan be adopted, the fruit should be kept clean.

Barren Strawberry Plants.—Fruitful plants may become barren from circumstances, but a tendency thus produced is ever apt to continue. When we force plants and then turn them out, we discard all those that have missed fruiting. Plants of the normal type if unfruitful this season, may be fruitful the next; but though we have found this to be the case, we have several times experimented, and found that unfruitful plants continued unfruitful for a number of generations—in one instance ten generations by runners never yielded a bloom. It is well, therefore, to take runners from fruitful plants. There is one prominent case in which our readers with small gardens need be in no danger of a mistake. We have cleared out a score or two of unfruitful plants, that their room might be taken up by better plants, and chiefly that no runners should be taken from them. We could see these plants as we passed along. They grow stronger than the fruitful ones, are more upright in growth, the buds more upright and pointed, and often tinged with a deeper pinky colour. If in addition to these marks there are lots of strong runners coming from them all round, there need be no delay in cutting them out. We do not believe that such plants or their progeny, under any condition, will be likely to be fruitful if allowed to remain. As they produce such strong and early runners, they are very apt to be selected for young plants, and thus the evil is perpetuated. We have cut up a score or two of Keens' Seedling, beautiful plants with fine foliage, but with less or more of the above marks; and considerable attention and experience would lead us to the conclusion, that the runners from such plants would be very apt to continue to produce nothing but runners. We have not a doubt that many fine-looking plants in pots for forcing, refuse to show bloom from this cause alone, and to avoid it there is no plan safe except removing these strong, sterile, early-runner plants. In every case the very free, and very early production of runners, are signs and consequences of sterility in bloom and fruit. As stated, we have found such plants and runners become fruitful in time, but these were exceptions so few, and to be waited for so long, that prudence dictates the selecting of runners from fertile plants. Just as in the case of the buds, it often happens that the strings of the runners of such strong sterile plants are deeper coloured than the more moderate-sized fertile ones. Last season we saw a bed of Keens' Seedling, seemingly well managed in every way, but more than in three parts were barren. The barren plants could be distinguished without stooping to examine them, merely by the more upright habit, pointed buds, and luxuriance of growth.

ORNAMENTAL DEPARTMENT.

The bright sun succeeding the rain, has given plenty of work in keeping lawns short and smooth. We have finished the bulk of planting in the flower garden, though there will still be a working-up and regulating of edgings, &c. A great ease in planting is obtained by edging beds, however small, of a contrasting or complementary colour. A bed thus becomes more pleasing and perfect in itself, as well as when forming part of a group. Little watering has been needed, but as the sun baked and hardened the soil, we had the surface broken with a

Dutch hoe and a fine-pointed fork. We should have nothing to grumble at here if the dry days had not brought us clouds of birds early in the morning. In search of something moist and soft, they have nearly dug up the plants in some beds, making great holes close to the stems, and thus injuring the roots. Netting until the ground were more covered was out of the question, but we find they have been considerably deterred visiting the beds by fastening strings to sticks, stuck in the ground obliquely, with a piece of newspaper tied to the end of the string. Bunches of feathers we find scarcely so useful. Merely as a proof how soon the surface of the ground has become dry and hard, we find that the birds are eating Cherries and Strawberries when quite green, which they very seldom do. With a genial rain there will be plenty of soft food to be procured, without digging down at the roots of our fresh-turned-out bedding plants.

Much time has been occupied in potting Ferns, Balsams, Achimenes, Colonses, Zonal Pelargoniums; and the first large-flowering Pelargoniums and Roses have been set out in the sun to harden and ripen their wood, Chinese Primroses picked off, and Cinerarias turned out into soil to produce sucker-like young plants. Chrysanthemums and Roses have been watered, ground stirred for planting Stocks, Asters, &c., and a few annuals sown for late blooming.—R. F.

COVENT GARDEN MARKET.—JUNE 16.

LITTLE or no change has taken place here, foreign arrivals being of the usual character, and home-grown produce sufficient to meet the demand, except strawberries, which are backward, and do not ripen well out of doors. Pine Apples of English growth are freely supplied, and prices are receding.

FRUIT.									
	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	4	0	Melons.....each	5	0	10	0
Apricots doz.	3	0	4	0	Nectarines.....doz.	10	0	15	0
Cherries.....lb.	1	0	3	0	Oranges.....100	4	0	12	0
Chestnuts.....bush.	0	0	0	0	Peaches.....doz.	12	0	24	0
Currants ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black.....do	0	0	0	0	Pine Apples.....lb.	6	0	10	0
Figs.....doz.	10	0	15	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	0	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	1	6	Raspberries.....lb.	0	0	0	0
Gooseberries .. quart	0	6	1	0	Strawberries.....lb.	5	0	8	0
Grapes, Hothouse. lb.	4	0	10	0	Walnuts.....bush.	10	0	15	0
Lemons.....100	6	0	12	0	do.....100	1	0	2	0

VEGETABLES.									
	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	6	0	Leeks.....hunch	0	4	0	6
Asparagus.....100	3	0	6	0	Lettuce.....score	1	0	1	6
Beans, Kidney .. bd.	1	0	1	6	Mushrooms.....pottle	1	0	1	6
Beet, Red.....doz.	2	0	3	0	Must.& Cress,packet	0	2	0	3
Broccoli.....bunch	0	0	0	0	Onions.....bushel	10	0	0	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsley.....sieve	3	0	4	6
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Peas.....quart	2	0	3	0
Carrots.....bunch	0	8	1	0	Potatoes.....bushel	4	6	6	0
Cauliflower.....doz.	4	0	8	0	Kidney.....ditto	4	0	7	6
Celery.....bunch	1	6	2	0	Radishes doz.bunches	1	0	0	0
Cucumbers.....each	0	6	1	6	Rhubarb.....bunch	0	4	0	6
Endive.....doz.	2	0	0	0	Shallots.....lb.	0	0	1	0
Fennel.....bunch	0	3	0	0	Spinach.....bushel	2	0	3	0
Garlic.....lb.	0	8	0	0	Tomatoes.....doz.	2	0	3	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	8	1	0
Horseradish ..bunch	3	0	6	0	Veget. Marrows..doz.	0	0	0	0

TO CORRESPONDENTS.

GARDEN PLANS (W. P. E.).—We never furnish garden plans; no one can do so justly without seeing the place.

GRAPES DECAVINO (Read J. N.).—They are severely affected with the ulceration called by gardeners "the spot." It is caused by the roots not supplying sap in quantity sufficient to maintain the rapid growth of the fruit and other parts of the vine. The treatment we advise is to remove the earth down to the first tier of roots, replace it by a richer compost, give once a week a good soaking with weak manure water, of a temperature rather higher than that of the house, admit air more freely, and cut out the spotted berries as soon as detected.

GREENS FOR LATE SPRING USE (M. R.).—Jerusalem and Cottage's Kale or Borcole are, perhaps, the best, as they afford a long succession of sprouts. The seed should be sown early in April. Green Cauliflower is also good. It should be sown at the same time. The sprouts should be kept cut so as to prevent their running to seed. A few early Cabbages, from seed sown at the beginning of July, planted out on a warm south border early in September will, in favourable seasons, produce good Greens for use in April.

TURNIPS FOR SPRING USE (Idem).—The seed should be sown early in August, or at the end of July in cold localities, and the sorts we prefer are Chirk Castle Black, Orange Jelly, and White Stone.

POTTING ROSES FOR FORCING (Idem).—The best time to pot Roses is September or the beginning of October, and for forcing they ought to be grown specially for the purpose, plants being obtained in spring, grown through the summer, and not allowed to flower. You may take up plants at the end of October, or early in November, from the open ground, and pot them in 7 or 8-inch or larger pots, according to their size. The pots should be no larger than will hold the roots well. After potting they

should be removed to a cold pit, or cold house, pruning them when the leaves have fallen, or, if these do not fall in December. In February they may be placed in a house where there is a gentle heat, but they will not endure hard forcing, though they will succeed well in a greenhouse, giving them plenty of air and light. You may supply them with liquid manure at every alternate watering from the time the flower-buds show until they expand.

ROSE TREE CASTING ITS FLOWERS (F. Y.).—We attribute the falling of the flowers previous to expansion to want of water at the roots, and the dry position in which the plant is growing. There is no remedy but to syringe the foliage daily during dry hot weather, and give copious waterings to the roots in dry periods, especially in spring, when the buds are swelling and advancing towards expansion.

DESTROYING APHIDES ON ROSE TREES (A Subscriber).—The safest plan is to boil 2 ozs. of the strongest shag tobacco for five minutes in a gallon of water, cover up, and let the liquor stand until cool; then add sufficient water to make three gallons. This liquid may be syringed over the plants, or the shoots may be dipped in it. The leaves are probably falling from the wall Roses owing to want of water, with which they should be well supplied in dry hot weather. The ground round Roses may be mulched now with short manure, but not more than 1½ or 2 inches thick, and water copiously in dry weather. It would add much to the vigour of the plants if they were syringed forcibly in the evening, but not after the blooms expand. They may be watered with guano water once or twice a week up to September.

MANURE WATER FOR CAMELIAS AND AZALEAS (A Subscriber).—It would not be desirable to give them manure water from a cesspool, as you do not know the strength of the liquid. One peck of fresh cow dung to thirty gallons of rain water, well stirred up each time, is a good liquid manure for them, and it may safely be given whilst the plants are making new growths, or when swelling their flower buds. Azaleas should be kept in a greenhouse until the growth is completed and the flower buds formed, keeping them as moist and close as you can, so as to ensure free growth, and then give plenty of air to ripen the shoots and buds.

CYCLOMANS AFTER FLOWERING (Idem).—Plants now at rest may be placed out-of-doors in a position shaded from mid-day sun, keeping the soil moist, and at no time ought it to become dust dry, though it should be drier when the leaves have decayed than when the plants are growing. You do not say what kind the Cyclamans are, but we presume they are varieties of *C. persicum*, if so they should be potted at the end of September, placed in a cold frame, and removed to a shelf in the greenhouse before severe weather sets in, assigning them a light airy position. If they grow well, and appear to require more room, they may be shifted into larger pots in December or January, which will cause them to bloom somewhat later than if they were not repotted at that time. They should not be potted if the pots are not full of roots.

POTTING KALMIAS AND RHODODENDRONS FOR FORCING (Idem).—From the middle of September to the middle of November is the best time for shifting these plants, whether for potting or planting. After potting the plants should be plunged in coal ashes in a sheltered situation, well watering if the weather be dry, and affording protection from severe frosts by a covering of mats or other materials; or, after October, they may be placed in a cold pit or house, the pots being protected with some dry hay or other material if prolonged frost set in.

PEACH TREE LEAVES BLISTERED (Mrs. S.).—The leaves sent are badly blistered. The blistering is caused by cold succeeding a period of bright weather, or by hot days succeeded by cold and frosty nights; the consequences are a stagnation of the sap, and the rupturing of the sap vessels. There is no prevention but giving more or warmer covering, and continuing it until all danger from frost or cold weather is past. We advise you to pick off the leaves most affected, and to give a good syringing with a solution of 1 oz. of soft soap to the gallon of water; whilst the foliage is wet dust with flowers of sulphur, as there is abundance of mildew on the leaves sent us. During hot dry weather it would be highly beneficial to the trees to syringe them with water in the evening two or three times a week, or oftener, and to keep them well watered at the roots during dry weather, every alternate watering being with liquid manure. It is only in very dry hot weather that watering will be required.

WATER LILIES (T. W. G.).—The pond is quite deep enough, but it will answer for the two you name—*Nymphaea alba* and *Nuphar lutea*. The best time to plant them is at the end of April or beginning of May, but planting may now be performed. They should be taken up with as much soil or mud as will adhere to the roots, preserving as many of these as possible, and taking care to leave the growing part of the thick fleshy roots of the *Nuphar*. If the plants are to be conveyed any considerable distance, they should be packed in wet moss, and the air excluded from every part as far as possible. The planting should be done as soon as practicable, and as the bottom of the pond is nothing but clay, procure some shallow baskets—those used for fish will answer well—and put the plants in them in the same manner as you would any other description of plant, using a compost of two parts loam and one part leaf mould, or peat, surfacing with moss, and securing the whole with string or small wire. The basket may then be sunk in the pond at the place required, and no further attention is necessary. If there is mud in the pond, all you will have to do will be to fasten a stone or half-brick to the roots of each plant, and throw the plant into the pond; or they may be fastened to the grass side of pieces of turf about 1 inches square, and 6 inches thick, and dropped into the pond. They must be weighted, otherwise they will swim, and of course not grow.

PLANTS FOR A DARK ROOM (Wildon).—We do not know of any plants that for a length of time would succeed in a dark room. Palms would succeed the longest, but they must have light, air, and moisture when making their growth, and should not be placed in the room until growth is well matured. *Hyophorbe Verschaffeltii* and *H. amaricaulis* would be a good pair.

CONVERTING A CONSERVATORY INTO A FRERNERY (Kentish Subscriber).—The conservatory would not be too hot if kept at a greenhouse temperature, and you could have a great number of species and varieties in it. As it is of good height and size, it would answer admirably for tree Ferns. We would not advise climbers or Vines for the roof, but would suspend Ferns and Mosses in baskets. The other Ferns we would grow on rockwork, which should be so arranged as to produce a good effect, some parts being low, and others high, parts overhanging others receding, and the whole having a bold rugged aspect. If the roof is already

glazed, we would not remove it, but have it "frosted" in some neat pattern, which a painter would give you. It should be white, as coloured glass is not beneficial to plants. The glass should be frosted on the inside, and the frosting will last a number of years if well done when the glass is dry, and will prevent the Ferns being scorched by the sun. The side lights should be frosted as well as the roof. If it is not already glazed, ground or frosted glass should be employed.

RUSSIAN (D. B.).—It is a fusiform-rooted plant or vegetable. The term "fruit" is confined exclusively to the part containing the seed of a plant.

ACHIMENES AND GLOXINIA CULTURE (J. A.).—The Achimenes should be potted in February or March, placing the roots rather thickly on the surface of a seed pan, filled to within half an inch of the rim with a compost of equal parts of fibrous loam, sandy peat, and leaf mould, adding one-sixth of sand. Cover with half an inch of fine soil, and place the pan at the back of a Cucumber frame. The Gloxinias may be started at the same time, placing them in pots about twice the width of the tubers. The compost used for the Achimenes is suitable for them. The soil should not be made wet; more keep it moist, watering just within the rim of the pots in which the Gloxinias are, so as to give moisture to the soil without pouring it over the tubers. When the Achimenes and Gloxinias are beginning to grow they may have water more freely, and when the former are from 1½ to 2 inches high, pot them in shallow pots or deep pans, 6 or 8 inches high, taking them up with as much soil and as many roots as possible, and planting them about 2 inches apart. They should be continued in the frame or house, and ought to have a temperature of 60° at night, and 7½ to 75° by day, with a rise to 80° or 85° from sun heat. They should be kept thus until they are advanced for flowering, when they should be hardened off and removed to the greenhouse, where they will flower well in the warmest part. The Gloxinias should be shifted into larger pots when their pots become full of roots, giving them their final shift by the time the flower buds appear. They should be kept near the glass to prevent their becoming drawn, and should have slight shade from bright sun, hardening them off and removing them to the greenhouse as they come into bloom. When the flowering is over, both the Achimenes and Gloxinias should have a light, airy position, giving no more water than will be sufficient to keep the foliage from flagging, and when it begins to turn yellow withhold water, and set the pots on the floor, which, by the moisture it will communicate to the pots, will prevent the soil from becoming dust dry in winter. From October to March the temperature should not fall below 40°, but it is better at 45°.

CALADIUM IN A COOL HOUSE (Idem).—You could not grow any of the Caladiums satisfactorily in a cool house such as you describe, as they require a winter temperature of from 60° to 65°. If you could give them that you might start them in a hotbed, and continue them in it until the sun had sufficient power to give a stove temperature to your greenhouse. C. esculentum is one of the most hardy, but you should remember that last winter was unusually mild, and another winter may not be so favourable. Caladiums are stove plants, and require a greater heat than moist stove plants to grow them well.

SHADING BEGONIAS (Idem).—Slight shade from bright sun is very beneficial, and ought to be given from March to September to the plants grown for their foliage, whilst those cultivated for their flowers cannot have too much light.

MELONS NOT SETTING (New Path).—We consider the non-setting of the fruit a result of the plants having been "kept moist, and given little air." The soil ought to be moist, indeed a good watering should be given before the flowers expand, and without making the surface moister than can be helped. Keep it dry when the plants are in flower. Air should be given in the morning, and when the atmosphere is dry fertilise the flowers, which you seem to understand, in the early part of the day. The frame should be kept at 75° in the afternoon with a good heat, by the time the temperature is about 75°, giving air in the morning at 70°, increasing the amount with the heat, and allowing the temperature to rise to 85° or 90° from sun heat. The shoots should be kept moderately thin, and those showing fruit should be stopped one joint beyond the fruit if the plants are strong, or two joints if they are weak. A Cockscomb should have an even comb, representing the half of a circle, and it should be regular in outline. If at all jagged and irregular, as represented in your letter, it will never please those who are accustomed to a good well-grown head.

INSECTS ON ASPARAGUS (E. P.).—We should think your plants are attacked with the Asparagus beetle (*Crioceris asparagi*), which perforates the buds, gnaws the rind of the stem, and feeds upon the leaves. Picking off the larvae and beetles which may be found from May to September are

the only means of freeing the plants of this insect. It would not do the plants any harm, but would be rather beneficial to remove the surface soil down to the crown, taking care not to injure them, and replace it with fresh soil enriched with manure.

PELAGONICUM LEAVES SPOTTED AND BLISTERED (P. S.).—The leaves have been severely infested with aphids, and the spots and blisters have been caused by the sun shining on the foliage when it was wet. The atmosphere ought to have been kept dry, and the foliage not wetted in April, admitting air early so as to dissipate any moisture accumulating during the night before the sun could shine powerfully on the plants.

BRIGHT LEAVES (A. H. J. L.).—The French leaf enclosed is, in garden phraseology, "blistered." The thickening of the parenchyma, and the consequent distortion, are occasioned by exposure to sudden vicissitudes of temperature. To prevent blistering, effective protection is the only means. Pick off the blistered leaves. We cannot detect any blight on the other leaves. See answer to another correspondent this day.

BEEF NOT PROGRESSING (L. Q.).—If your Beef is intended for ornamental purposes, we are not surprised at your complaining of its being late and making no progress, as ours is in the same condition; but guano will do no good unless the ground is poor, as too much manure in the ground will to a certain extent spoil the colour of the foliage. If the plants show four or five leaves each, they will take their position in the flower garden by August. A sowing about the 1st of July, putting in the seed rather thickly so that the plants may be not much larger than full-grown Radishes, answers best for winter and spring display.

SOWING KIDNEY BEANS LATE (Idem).—We have sown the dwarf varieties as late as the 1st of August, but that is too late in general, although the result in the case alluded to was satisfactory; but scarlet Runners ought not to be sown later than the 1st of July, and even then will not continue in bearing later than those sown on the 1st of June. Circumstances, however, compel a late sowing sometimes.

ASPARAGUS NEWLY PLANTED (Idem).—Your recently planted Asparagus will not require either salt or manure water until it has become established and grown freely, but if the weather be dry, perhaps a good watering of plain water may be of service. We often plant in June, taking up the seedlings that have been raised in a nursery bed. We prefer the present time to any for the purpose.

FRUIT AND VEGETABLES FOR MARKET (A Constant Subscriber).—We have put your letter into the hands of one well versed in the marketing of hardy fruits, and he informs us that it is not unusual when a glut of Apples is sent in at once—say after a high wind in September, for the prices to fall so low as not to cover the expenses of carriage by rail and commission, the difference being charged to the sender. This, of course, is selling fruit at a dead loss, but most growers have to submit to it once or twice in the season. For places forty or fifty miles from London where large quantities of fruit are grown, the railway carriage is 4s. to 8d. per bushel, and the commission is often 6d., so that if Apples or other fruit only realise 10d. it is easy to see there must be a loss. Nevertheless, the feeling is very general amongst fruit-growers that a salesman's fruit brings better call on than that of a grower; and the high prices that fruit receives, when retailed seem so widely out of proportion to what the grower receives, that there is evidently a good profit somewhere. We fear we can give you but little hopes of amendment. Growers on a large scale have attempted to reform the trade and failed. All we can recommend is to try another salesman if you think you have not had justice done. In general it is better to sell small quantities to some of those hawkers or buyers of fruit who attend the markets of inland towns personally, as they manage to obtain better prices than those who have to depend on salesmen. The prices quoted in THE JOURNAL OF HORTICULTURE are for good fruit and vegetables.

NAME OF FRUIT (A. F. N.).—Your Apple is apparently French Crab. We are sorry this answer has been delayed so long owing to your letter having been mislaid.

NAMES OF PLANTS (P. P. J.).—*Pyrus Aria*. (James Scott).—1, *Saxifraga hypnoides*; 2, *Agrostis elegans*. (A Subscriber).—*Centranthus ruber*. (W. S.).—*Adenandra speciosa*; 2, *Eutaxia myrtilloides*. (Mary).—*Isia polystachya*. (E. Moislund).—*Czackia hians*. (An Aberdeenshire Gardener).—*Antennaria plantaginifolia*. (J. McA.).—*Serapias pseudo-cordigera*. (Mary).—We cannot undertake at all times to name Cape bulbs from single flowers. We believe your plants to be as follows:—1, *Watsonia marginata*; 2, *Sparaxis stellaris*; 3, *Isia tricolor*; 4, *Sparaxis grandiflora*; 5, *Isia maculata*. No. 3 is *Polygala Dalmaniana*. (A Pine-grower Subscriber).—1, *Pteris serrulata*; 2, *Polystichum angulare*; 3, *Cystopteris fragilis*; 4, *Pellaea cordifolia*; 5, *Selaginella Kraussiana*; 6, *Pteris cretica*; 7, *Probably Cinnabala flava*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 15th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 9	30.114	29.975	73	43	65	60	N.W.	.00	Very fine; exceedingly fine; clear and fine at night.
Thurs.. 10	30.066	30.083	63	36	63	59	N.	.00	Very fine; cloudy, cold wind; dense clouds, cold air.
Fri.... 11	30.082	29.982	47	41	60	58	N.	.00	Cloudy but fine; very fine; fine, cloudy and cold.
Sat.... 12	29.878	29.841	67	46	62	58	S.	.01	Very fine; clear and fine; densely overcast.
Sun.... 13	29.680	29.472	69	50	61	58	S.	.56	Overcast; very fine; densely overcast.
Mon.... 14	29.718	29.480	63	38	60	58	N.W.	.12	Heavy rain; cloudy; clear and fine at night.
Tues.. 15	29.740	29.523	68	41	58	57	W.	.06	Stormy; boisterous with rain; clear, brisk wind.
Mean..	29.876	29.733	66.43	42.57	61.29	58.29	...	0.74	

POULTRY, BEE, AND PIGEON CHRONICLE.

EAST INDIAN WILD BREEDS OF POULTRY.

(Concluded from page 317.)

From the great difference in the voice or crow, in its far greater hoarseness in the Malays, Cochins, and Brahmas, it

might certainly justly be inferred that these three sorts at least had descended from a larger variety altogether than the Gallus ferrugineus, and that this larger variety is now entirely extinct in a wild state; but the nearest approach to it is the Gallus giganteus, or Chittagong Malay (not grey, but red) of India. As mankind spread, the large, heavy, wild breeds were, of course, much more easily caught, tamed, and domesticated

than the smaller wild races, and so became extinct as wild altogether. I am rather inclined to this theory myself, from the different voice or crow so very apparent in the three large sorts named.

In the Zoological Gardens, Regent's Park, the only specimens of the *Gallus Bankiva* to be seen, are so tame that they run wild about the place, and are evidently not pure specimens of the real wild *Bankiva*, being too tame, the cocks rather too large, and they have evidently been crossed both with the Black-breasted Red Game with willow legs, and with our domesticated larger Game Bantams of the same colour. The *Gallus Sonnerati* are not so large there, and are very much wilder birds; but the hens all show combs, and are evidently crossed with the *Bankiva*, and not pure specimens of the hens of *Gallus Sonnerati*, only their pale breasts showing that they are of the *Sonnerati* race at all. The cocks are apparently bred tolerably pure, and retain their blue-grey colour. The willow or greenish-legged, yellow-skinned breeds, may be the cross between the original Indian yellow-legged breed and the white-skinned, more northern wild breeds with the brownish legs; and this is also a probable theory.

I believe I have now mentioned all that is necessary, or at all worth recording on this subject, respecting which so many theories have been published in the various works on poultry. —TREVOR.

FEATHER-EATING FOWLS.

My fowls are kept in quite a small place, and I used to be troubled by the feather-eating propensity. I found a perfect cure in a handful of linseed mixed in a bran mash, made with treacle and hot water, given twice or thrice a week. The improvement in plumage is remarkable. —J. S., *Sunderland*.

COLCHESTER POULTRY SHOW.

This was held on the 15th and 16th inst. We must defer our remarks till next week; but the following is a complete list of the awards:—

DORRINGS (Any variety, Class 1).—1 and Cup, W. Tippler, Roxwell, Chelmsford, 2 and S. H. Lingwood, Barking, Needham Market. *hc*, J. Normao, Colchester. *c*, Dr. Campbell, Brentwood; J. Frost, Parham.

DORRINGS (Any variety, Class 2).—1, F. Parlett, Great Baddow, 2, H. Lingwood, 3, Dr. Campbell. *hc*, Dr. Campbell, W. Tippler. *c*, Mrs. A. Hurt, Alderwasley, Derby.

GAME (Black-breasted and other Reds, Class 3).—1 and Cup, W. Gilliver, Polesworth, Tamworth, 2, W. Boyes, Beverley. *hc* and *c*, S. Matthew.

GAME (Any other variety, Class 4).—1, Rev. F. Watson (Pile), 2, T. Dyson, Halifax. *hc*, Rev. F. Watson (Duckwing); W. Boyes (Duckwing). *c*, W. Gilliver (Duckwing).

GAME (Black-breasted and other Reds, Class 5).—1 and 2, S. Matthew (Brown Red). *c*, T. G. Lodge, Folkstone (Brown Red).

GAME (Any other variety, Class 6).—1 and *c*, S. Matthew, 2, Rev. F. Watson.

BRAMMAS (Dark, Class 7).—1, Mrs. A. Hurt, 2, Mrs. Burrell, Ipswich. *hc*, A. O. Worthington, Barton-on-Trent; H. Dowsett, Pleshey. *c*, J. K. Fowler, Aylesbury; Mrs. A. Hurt.

BRAMMAS (Light, Class 8).—1, H. M. Maynard, Holmewood, Ryde, 2, H. Dowsett.

BRAMMAS (Dark, Class 9).—1 and Cup, E. Leech, Rochdale, 2, Mrs. A. Hurt. *hc*, Mrs. A. Hurt; H. Lingwood, Middlesham.

BRAMMAS (Light, Class 10).—1, H. Dowsett, 2, A. O. Worthington. *hc*, H. M. Maynard; H. Dowsett.

COCHINS (Any variety, Class 11).—1, Mrs. Woodcock, 2, J. K. Fowler (Partridge), 3, F. W. Rust, Hastings (Buff).

COCHINS (Any variety, Class 12).—1, Mrs. Burrell (Buff), 2, Mrs. Christie, Glydebourne (Buff), 3, S. Pelgate, Ipswich (White).

SPANISH Class 13.—1, H. Pickles, jun., Earby, 2, T. Hellen, Springfield, 3, T. Bourdillon, Colchester.

SPANISH Class 14.—1, F. James, Peckham Rye, 2, P. H. Jones, Fulham, 3, H. Lingwood, *c*, P. Waller, Wood Green.

HAMBURGH (Golden-spangled, Class 15).—1, W. K. Patrick, West Wynch, 2, H. Pickles, jun.

HAMBURGH (Golden-pencilled, Class 16).—1, W. K. Tickner, Ipswich, 2, H. Pickles, jun., *c*, E. B. Edwards; C. Havers, Ingatstone.

HAMBURGH (Silver-spangled, Class 17).—1, Mrs. Burrell, 2, Mrs. Pattison, Maldon. *hc*, H. Pickles, jun.

HAMBURGH (Silver-pencilled, Class 18).—1, H. Pickles, jun.

HAMBURGH (Golden-spangled, Class 19).—1, J. P. Lovarside, Newark.

HAMBURGH (Golden-pencilled, Class 20).—1, W. K. Tickner, 2, C. Havers.

HAMBURGH (Silver-spangled, Class 21).—1, Rev. F. Tearle, Newmarket, 2, H. Pickles, jun., *hc*, Mrs. Burrell.

HAMBURGH (Silver-pencilled, Class 22).—1, Mrs. Burrell, 2, H. Pickles, jun.

POLANDS (Any variety, Class 23).—1, W. K. Patrick (Silver), 2, Mrs. Burrell (Silver-spangled). *hc*, D. Mutton, Brighton (White-crested). *c*, P. H. Jones.

POLANDS (Any variety, Class 24).—1, D. Mutton (White-crested), 2, Mrs. Burrell (Silver-spangled). *hc*, W. K. Patrick (Golden).

FRENCH VARIETY (Class 25).—1, Col. Stuart-Wortley, Grove End Road, London (Crève-Cœur), 2, J. K. Fowler (Crève-Cœur), 3, W. Tippler (La Fleche). *c*, H. M. Maynard (Houdan).

FRENCH VARIETY (Class 26).—1, Hon. W. C. W. Fitzwilliam, Wentworth

Woodhouse (La Fleche), 2, Col. Stuart-Wortley (Crève-Cœur), 3 and *hc*, W. Tippler (Houdan and La Fleche).

GAME BANTAMS (Black-breasted and other Reds, Class 27).—1, H. Dowsett, 2, R. R. Parker, Ipswich (Black Red), 3, J. Crossland, jun., Wakefield (Black Red).

GAME BANTAMS (Black-breasted and other Reds, Class 28).—1, J. Crossland, jun. (Black Red), 2, H. P. Leech, Woolpit (Black Red), 3, Rev. E. S. Tiddeman, Childeritch (Black Red).

GAME BANTAMS (Any other variety, Class 29).—1, W. Adams, Ipswich (Duckwing), 2, H. P. Leech (Duckwing), 3, W. Kersey, Hadleigh (Duckwing).

GAME BANTAMS (Any other variety, Class 30).—1, W. Adams (Duckwing), 2, E. Sheerman, Chelmsford.

BANTAMS (Any variety except Game).—1, G. H. Hedson, North Petheron (Sebrights), 2, W. Woodcock (White Japanese), 3, S. S. Mossop, Long Sutton (Black). *c*, Brotherton & Waddington, Ilke (Black).

ANY OTHER VARIETY NOT PREVIOUSLY NAMED.—1, Mrs. Pattison (Black Hamburgh), 2, Mrs. Burrell (Silkies).

DUCKS (Aylesbury).—1, Mrs. Burrell, 2, J. K. Fowler. *hc*, Mrs. M. Seamons, Hartwell, Aylesbury; J. K. Fowler.

DUCKS (Rouen).—1, J. K. Fowler, 2, F. Parlett.

TURKEYS (Any variety).—1, Mrs. J. Mayhew, Chelmsford, 2, R. Pigott, GEsse. —1, J. K. Fowler, 2, Mrs. M. Seamons.

SELLING CLASS (Any age or variety).—1, Dr. Campbell (Dorkings), 2, Rev. F. Tearle (White Dorking), 3, Rev. F. Watson (Black Red Game). *hc*, G. Simpson, Chelmsford (Aylesbury), *c*, G. Simpson (Coloured Dorking); Miss J. Milward, Bristol (Cochin).

PIGEONS.

CARRIERS.—Cock.—1 and 2, R. Fulton, Deptford. *hc*, L. Wren, Lowestoft. *Hen*.—1 and 2, R. Fulton.

FOUTER.—Cock.—1 and 2, R. Fulton. *hc*, P. H. Jones. *c*, J. Lufkin. *Hen*.—1 and 2, R. Fulton. *hc*, J. Lufkin, Farnham (Red).

TUMBLERS (Almond).—1, Withheld, 2, R. Fulton. *hc*, P. H. Jones; H. Yardley, Birmingham.

TUMBLERS (Any other variety).—1 and 2, R. Fulton (Short-faced). *hc*, P. H. Jones (Kites); J. Lufkin (Splashed). *c*, H. Yardley.

OWLS.—1, P. H. Jones, 2, R. Fulton. *hc*, Rev. F. Watson; H. Green, Pantails. —1, H. Yardley, 2, T. C. & E. Newbitt, Epworth, Bawtry.

JACOBINS.—1 and 2, R. Fulton.

TURBITS.—1, R. Fulton, 2, P. H. Jones.

NUNS.—1, P. H. Jones, 2, H. Yardley.

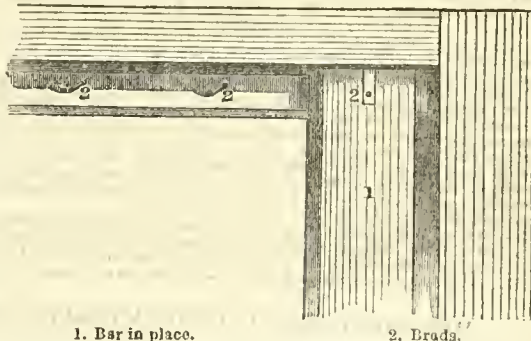
ANY OTHER VARIETIES.—1, P. H. Jones, 2, E. Moyston, Diss, Norfolk (Black Runts). *hc*, Major Bishop, Colchester (Porcelains); P. H. Jones. *c*, J. J. Hazell, Grest Bromley (Trumpeters).

SELLING CLASS.—1 and 2, E. Sheerman.

JUDGES.—J. M. Smith, Esq., Skelton Grauge, near York; W. B. Tegetmeier, Esq., Muswell Hill, London.

SECURING THE BARS IN A BAR HIVE.

For the last few years I have here had in use a very simple and effectual contrivance for keeping the bars of my bee hives in their places, and as I think the plan may be useful to others, I send you a description of it.



Along the front and back of the hive is made a rabbet for the bars to rest on, three-eighths of an inch wide, and the same depth as the thickness of the bars. Along the bottom of this rabbet a brad or bit of strong wire is driven in exactly where the middle of each bar is intended to rest, allowing the ends of the brads to stand up as much as the depth of the rabbet. A vertical saw cut of three-eighths of an inch deep is made in a longitudinal direction in the ends of each bar, into which the brads fit, and on the crown board being screwed on, the bars are kept quite firm and in their proper position. It will thus be seen that this plan does away with any possibility of the usual notches breaking away, and the hive is much more easily made. —BATH.

[We adopted this plan with bar hives more than twenty years ago, using wire bell staples instead of brads, and finding them infinitely preferable on account of the smooth and rounded character of the projections formed by them.]

FOUL BROOD.—In reply to the communication with the signature, "S. S., *Ware*," in the last number of your Journal,

we have the pleasure to state, that on full examination of the colony referred to, we do not find that it is suffering from foul brood.—GEO. NEIGHBOUR & SONS, 149, Regent Street, London.

VAGARIES OF AN ITALIAN QUEEN.

SOME of your readers who are fond of bees may be interested by hearing about the singular conduct of a Ligurian queen, in the apiary of M. Falcon, Esq., Stainburn, Worthington.

The queen in question led off a swarm on the 31st of May, which settled in two divisions, one of them being rather scattered, the other compact but apparently smaller in number. The former division was hived first, in a common hive, but before the second could be joined to them they had all fled. There remained, then, only a small swarm, and it was placed in a Woodbury bar-and-frame hive quite empty. On the third day it was fed, and the syrup was taken readily. On the fourth day the queen was seen outside the hive by Mr. Falcon and his gardener at the same time. They saw her take flight and return, and enter the hive after a short time. On hearing the above, I must confess to having considerable anxiety about the safety of the queen. I lifted out all the frames and carefully examined the four pieces of new white worker comb, but I am certain there was no trace of queenly operations in the form of eggs or grubs. I then felt all but certain that the queen had come to grief. I gave directions for liberal feeding, however, and examined the hive again with care on the eleventh day after swarming. On the last frame I lifted I found not more than half a dozen eggs; but to see one only was an immense relief to me. There was pollen in several of the cells, and the small swarm seemed to be making the best of their numbers. I afterwards found the queen, and this settled all doubt as to her safety. As an encouragement to her, I put in a frame of ripe brood from another hive, and do not intend to open this hive for a week.

It would be interesting to hear the opinions of some of your readers on the above. What was the queen doing out of the hive at all? How is her conduct to be explained, as contrasted with that of most queens similarly situated? I have only to add that a quarter of an hour was allowed after swarming before any attempt was made to hive them.—E. B., Broughton Vicarage.

[The queen was unquestionably a virgin, and left the hive to mate with a drone in the usual manner.]

OUR LETTER BOX.

GOLDEN PHEASANT'S EGGS (E. B.).—We know of no place where you can sell your Golden Pheasant's eggs, unless it be at Stevens's, in King Street, Covent Garden. We think they would sell in baskets of one dozen. We cannot even guess at the price they will make.

HEN SITTING OVER-TIME (Subscriber).—There is no doubt the hen will sit her full time, although for ten days you could not place eggs under her. It is common for a hen to sit better after having been a few days on dumb eggs. When we have any we are anxious about, we never put them under a hen till we have ascertained she is a good and close sitter. We have known a hen that had been put on bad eggs, sit closely till the eggs had burst under her, and had produced maggots that were eating into her breast.

TWIRLS IN FOWLS (W. S. D.).—What you call "twirls" is giddiness, threatening apoplexy. The fowls are probably too fat. Give them less nourishing food; chiefly washed potatoes and abundance of lettuce leaves.

PURCHASING (W. Halfpenny).—The Editors cannot reply privately. The carriage of eggs and fowls is paid by the purchaser unless the contrary is agreed upon previously. We never purchase birds that have not been seen either by ourselves or a friend on whose judgment we rely; and we never send birds to be introduced if not liked unless we have the money sent previously, or a satisfactory reference. The best course for both vendor and intending purchaser, is for the latter to send a post-office order to the vendor, payable ten days after date, payment of which can be stopped if needed. "The Poultry-keeper's Manual," with coloured plates is 7s. 6d.; "Poultry Book for the Many" is 6d. They can be had at our office.

FLYING TUMBLERS (Adolphus).—We think the time that Tumblers are said to keep on the wing has been much exaggerated. Our experience agrees with yours. The longest flight naturally follows the longest time of confinement. Very absurd stories, so we have deemed them, have been told by persons to us of the prolonged flight of their Tumblers. One old man, too old to speak so wide of the truth, gravely informed us his birds kept up all night, and he could see them when they crossed the moon! Mix peas with the other food.

PARROT PLUCKING ITSELF (A Subscriber).—Irritability, and a desire to pluck out the feathers are occasioned by giving Parrot animal food, most probably a bone to pick. This should never be done; it is altogether unnatural to them, as they are purely grain-eating and fruit-eating birds. Apply once a-day to the body of your bird a lotion made of common salt dissolved in spring water, and give it nothing but bread and milk for some time.

STRAVED SWARM (G. T.).—If you can prove that the swarm of bees which flew into an unoccupied garden about 10 yards came from your

hive, your neighbour who has no bees of his own, who took them and refuses to give them up, can be compelled, and ought to be compelled, to give them up. Consult a solicitor, and sue your neighbour in the County Court.

BEES NOT ENTERING A SUPER (H. W.).—There is nothing extraordinary in stocks of bees refusing to work in supers after they have swarmed, since it is but seldom that they will do so. If you mean that you put on supers before they swarmed, and that they refused to take possession of them, it is only the experience of many others who have found it equally difficult to induce bees to accept supers. The use of full-sized guide-combs filled with either liquid honey or simple syrup, is perhaps the most probable way of overcoming this reluctance, and when a stock has swarmed, it is better to transfer the super from the stock hive to the swarm.

STRENGTHENING SECOND SWARMS (T. B. H.).—If you attain the art of "driving," and practise it instead of stupefying the bees, your plan will answer admirably. Refer to Mr. Woodbury's articles on utilising and uniting condemned bees, which appeared in Nos. 356, 357, 358, and 369, and carry out the instructions therein given. Your swarms weighing over 7 lbs. are remarkably large. The frames are evidently too large for their boxes, as there should be a space of from a quarter to three-eighths of an inch between them and any part of the hive. We fear, therefore, you will have to put them into larger boxes.

VARIOUS (Bewitched).—As the bees of a swarm rapidly diminish in numbers during the first three weeks after hiving, yours will not now require the etc. If the queen at first laid eggs in the super these will rapidly hatch out, and the seat of breeding will be transferred to the hive, so that in a few weeks' time you will probably find it free from brood and the combs filled with honey, but somewhat darkened where the brood has been. The bees in the Stewerton hive have not done well, and we should be obliged if "A RENAISSANCE BEE-KEEPER" would favour us with his opinion as to the best means of reinvigorating them. The expulsion of the two grubs which had probably become chilled is of no importance. We still consider the Ligurian variety superior to the common honey bee; and if you write to T. Woodbury, Esq., Mount Radford, Exeter, he will furnish you with particulars regarding them. (T. B. H.).—1. The probable cause of the bees deserting their hive was the death of their queen at a time when the absence of worker eggs or brood of a suitable age rendered them unable to supply her loss. This misfortune may very probably have arisen from natural causes over which you could have no control; or it may possibly have been brought about by a predatory attack by the inhabitants of the hive with which they ultimately fraternised. In the latter case you may have indirectly contributed to the catastrophe, if you placed the two stocks near together. 2. It is very difficult to transfer new combs, as they are too soft to sustain the weight of their own contents when their natural supports have been removed. Better defer the transfer until the hive become populous next spring, say in April or May, according to the season. In the meantime you will have the benefit of the instructions promised by Mr. Woodbury on this very point. 3. As you appear to have succeeded, you were certainly not altogether wrong in your treatment of the chilled and exhausted east. Had you, however, in the first place merely sprinkled them pretty liberally with simple syrup it would have saved you much trouble, and would probably have answered every purpose. We also advise simple syrup made with lump sugar for feeding, instead of giving beer. Put 3 lbs of sugar to 2 lbs of water, and boil a minute or two. 4. You may reduce Mr. Woodbury's instructions to practice as soon as they appear, by transferring the bees and combs of your old stock.

DROPSY (E. Walpole, jun.).—Your description leaves no doubt whatever that the disease is what Mr. Woodbury has hypothetically denominated "dropsy." His mode of curing it is first to look over the combs, and having captured the queen to place her in safety in some way; then remove the hive, putting an empty one in its place, and, spreading a cloth upon the ground, lift out all the frames in succession, brushing off every bee upon the cloth, and put the combs into the previously empty hive, finally introducing the queen at the top. Obvious immature bees may be picked up and returned to the hive, but no adult bee should be permitted access to it which cannot reach it by means of her wings. In this way all unhealthy bees are eliminated, and the disease is at once ended. The middle of a fine warm day must be selected for the operation. If the stock is extremely weak it may be strengthened by the very gradual addition of ripe brood combs from other hives. If it be too far gone for this mode of cure, it only remains to put the Italian queen at the head of a colony of black bees.

LIGURIAN BEES (A Bee-keeper).—T. Woodbury, Esq., Mount Radford, Exeter, can give you the information you seek.

DEAD BEES (C. W.).—The probability is, that the communication with one or other of the supers (possibly with both), is too restricted, and that the mortality among your bees arises from their not being able to find their way out. They may even, to some extent, have brought the evil upon themselves by the manner in which they have constructed their combs. We have known thousands of bees die in a super in this manner before the cause of the mischief was discovered.

LACTOMETER (North Essex Norfolk).—You can obtain it from Messrs. Negretti & Zambra, of Hatten Garden, London. The principle of the instrument is, that if new milk is poured into glass tubes and allowed to remain, the division between the cream, which floats upon the surface of the milk, will be so evident that its depth may be easily measured; and should the milk from any cow produce more cream than that of another, the difference will be seen by the divisions or marks on the glass tubes. The lactometer consists of four or five glass tubes, about half an inch diameter, and 11 inches long, fitted into an upright mahogany frame; each tube having a fine line drawn round it, 10 inches from the bottom; 3 inches from the line downwards, it is graduated into inches and tenths of inches. At milking time, each tube is to be filled up to the one with new milk. After standing twelve hours, the quantity of cream which floats upon the surface is shown by the scale of inches and tenths; each division will therefore represent one per cent. of the whole. If the milk given by a cow at one meal is one gallon, or eight pints, and the thickness or depth of the cream which floats upon it measures four or five divisions, multiply the number of pints, 8, by the depth of the cream, 4; the result will be that the produce of the cream of that meal is 32, or 1.12 pint. Care must be taken to fill these tubes as soon as the pail is taken from under the cow, for if any delay takes place, some of the cream will have ascended towards the top. The milk should be taken from the middle of the pail, which is to be done by dipping a cream pot below the froth.

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 24—30, 1869.	Average Temperature near London.			Rain in last 42 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.						
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.		Days.	m.	s.			
24	TH	MIDSUMMER DAY. Meeting of Zoological and Royal Geographical Societies.	73.6	49.0	61.3	15	45	af 8	19	af 8	39	af 8	morning.	6	af 5	15	2	6	175
25	F		72.9	49.3	61.1	20	46	3	18	8	25	9	6	af 5	15	2	18	176	
26	S		74.1	49.3	56.7	20	46	3	18	8	6	10	6	6	16	2	31	177	
27	SUN	5 SUNDAY AFTER TRINITY.	72.5	48.0	60.3	15	46	3	18	8	37	10	7	7	17	2	48	178	
28	M	QUEEN VICTORIA CROWNED, 1838.	73.6	49.1	61.4	16	47	3	18	8	4	11	12	8	18	2	56	179	
29	TU	Royal Horticultural Society's Rose Show.	73.0	48.6	60.8	12	48	3	18	8	27	11	16	9	19	3	8	180	
30	W	Royal Botanic Society's Show opens.	73.1	48.2	60.6	13	49	3	18	8	48	11	23	10	20	3	19	181	

From observations taken near London during the last forty-two years, the average day temperature of the week is 73.3°; and its night temperature 48.8°. The greatest heat was 93°, on the 27th, 1826; and the lowest cold 34°, on the 21th, 1832; and 28th, 1864. The greatest fall of rain was 0.89 inch.

SEDUMS AS BEDDING PLANTS.

(Read by Mr. R. H. BARD, Wellington Road Nurseries, St. John's Wood, at the United Horticultural Society's Meeting, April 12th, 1869.)



SEDUMS are becoming very fashionable, and will soon be more used than they are at present, I therefore think a few hints respecting some of them may be found useful. I do not intend to review the whole of the Sedums, but only some of the best, and I shall put them in four sections.

Section 1 consists of such as may be used for a groundwork or ground-covering for beds that are intended to produce a novel effect.

Some of them were employed last season on what I call the miniature mountains in Battersea Park, but, if I remember aright, Mr. Gibson called the spot Alpine Point.

Section 2 includes what are generally known as the Stonecrop or "Acre" section. They are very useful for bedding purposes in hot and dry situations where many other plants would not live.

Section 3 will be found a good and useful selection for rockwork.

Section 4 is very useful for autumn blooming.

SECTION 1.

Lydlum.—This is one of the prettiest; it is very dwarf, and of the most beautiful green I have ever seen.

Farinosum is a beautiful sort, one of the very best. It is dwarf, and of a very light glaucous green.

Pruinosum.—This is generally called glaucum, but the former is the proper name. It is very dwarf, of a glaucous green, and spreads rapidly. This is the kind which was chiefly used in Battersea Park last season.

Album has small, thick, very dark green leaves, and is rapid-growing, filling-up quickly, and very pretty.

Corsicum.—This is nearly grey, of dense dwarf habit, and a very good sort.

Brevifolium.—Greyish-white and red; dwarf; very distinct, and beautiful.

Anglicum.—Very dwarf; light green, turning reddish with hot weather, when it acquires a very pretty appearance.

Dasyphyllum.—This is a large form of *corsicum*, but of equal beauty.

Hispanicum is another very good kind, very dwarf, and of a light glaucous green. I think this will prove one of the best.

Cyaneum is pretty and distinct in colour and form; it looks like a very small *Echeveria glauca*.

Multiceps.—Small round heads; very curious and distinct.

SECTION 2.

This section is more useful than is generally supposed. One of its uses seems to be the covering of old walls and rockeries. A friend of mine brought me a piece last year from the Vosges Mountains, in the department of the Bas Rhin, and assured me that a castle, which was wholly covered with it in full bloom, had the appearance of "a real golden castle." It was the château de Hoh-Kœnigsbourg,

near the town of Schlestadt, and the people about there called the plant Gold-dust. As the specimen was in a rather dry state, I could hardly determine whether it was *Sedum acre* or *S. acre aureum*, but I should say it was the former. They are both very beautiful, and not to be despised though they are only Stonecrops.

Mornegalense is a fine free-growing variety of the *acre* style, and very pretty for bedding-out in summer.

Anopetalum, a large-growing, dark green Stonecrop, which does not appear to bloom at the same time as those previously mentioned.

Collinum.—This makes a much neater and prettier growth than *S. anopetalum*.

Sesuvium is another large form of *S. acre*.

Ochroleucum is somewhat like the former in growth, but the flowers are a kind of stone colour.

Pallidum.—This is a distinct sort; the colour of the flowers is a pale reddish-brown.

Pulchellum is the smallest I have seen of this section, and is certainly very pretty.

SECTION 3.

Macranthum has long stems; the leaves greyish, and turning reddish with age.

Monstrosum is a very peculiar sort; it is of a very dark green, and grows in the form of a Cockscomb.

Beyrichianum is a pretty, small, flat-growing kind.

Sieboldii and *Sieboldii variegatum* are both fine for rockwork, especially the latter, which is one of the best of the genus.

Azureum is a fine, free, spreading sort. The flowers of this also look well, as they are bluish.

Altissimum is of long growth; the leaves fleshy, of a greyish colour.

Kantschaticum and *Braunii* are very much alike. They are of a very dark green, and spread very quickly.

Carneum variegatum.—A very pretty variety, with variegated leaves.

Anacampteros has flat, glaucous-green leaves, and is fine.

Dentatum and *denticulatum* are both good. The latter is of rather longer growth than the former. They are both dark green.

Forsterianum is pretty and distinct, having long shoots thickly studded with fleshy-pointed leaves.

Glaucum Smithii is of closer growth than the former, and of a more glaucous hue.

Neglectum.—Very distinct and pretty, resembling a *Mesembryanthemum* in growth.

Populifolium is bush-like in its growth, and has very pretty leaves. It is very distinct.

Speciosum has long stems and round leaves, and is a good and useful kind.

Involutum partakes somewhat of the character of *ibericum*, but is of much closer habit.

SECTION 4.

Fabaria has large heads of white flowers. Those of *Fabaria rubrum* and *Telchicum* are purple.

These are very useful, coming into bloom in the autumn. The first two are the best, as they are two months later in

flowering than *Telephium*, and do not grow so tall, scarcely ever exceeding 1 foot in height. The best way to treat them is to plant them out in the garden, and take them up and pot them just as they are coming into bloom, which will be about October. They will be very useful when flowers are becoming scarce.

THE ARRANGEMENT OF CUT FLOWERS.

To arrange a bouquet, or to dress a vase with skill and taste, is no mean accomplishment, requiring, as it does, a thorough knowledge of the relative value of colours, much taste in producing harmonious blending or skilful contrast, a judicious use of spray and greenery to tone down the brightness, and, above all, a natural aptitude and liking for the work.

The composition of every bouquet, the arrangement of every vase, should form a separate study; all formality and stiffness must be avoided, and as close an approach as possible to "Nature's sweet simplicity," ought to be aimed at. Overcrowding, too, is an error but too often met with. I have seen bouquets, so called, which were a compact mass of Roses, and whose entire surface bristled with buds, the only aim of the maker appearing to be the crowding together of as many flowers as possible in a certain space.

The advantage of being able to throw a few flowers together quickly and effectively can hardly be overrated; for instance, a lady, accompanying her visitors about her grounds, wishes to offer them a bouquet, and in passing the gardener the request is made. He starts at once with knife and bast, forming his bouquet as he goes from plant to plant, and meets those for whom it is required, with the flowers skilfully arranged and neatly tied. In such cases, and they are by no means uncommon, the bouquet-maker has to decide promptly upon his flowers and colours, to combine them in pleasing and graceful order, and to do this so quickly and well that his employer may not be detained, but may likewise feel pleasure in offering such a bouquet to her friends.

In selecting flowers for this purpose, too great variety is to be avoided; a few fine blossoms, whose colours are complementary to each other, if well arranged, will invariably afford greater satisfaction than the most complicated piece of composition. It should always be remembered that when two coloured surfaces are in juxtaposition, they mutually influence each other: hence the importance of placing side by side those flowers whose form and colour are best adapted to harmonise or contrast favourably; and although it is not intended here to enter into a disquisition on the relative value of colours, yet it may be useful to remark, that when a person is thoroughly conversant with the relative value of the primitive colours, and their complementaries, it becomes an easy matter to effect harmonious combinations of their various shades.

Form, size, colour, and lightness are the leading features to be studied in the formation of a bouquet. A circular and convex form is, I think, the most pleasing, and is more generally appreciated than a decidedly flat surface. But it is in the size of a bouquet that bad taste is too often visible; a bouquet for the hand which is 9 inches in diameter, would appear to be quite large enough, but the tyrant Fashion demands bouquets of at least 12 inches; and as this is a decision from which there is no appeal, the maker has to use as much wire as possible, so that although the bouquet is of a large size, yet its weight may not be burdensome to the wearer, nor the handle too bulky to fit into the bouquet holder. Wire, in addition to its usefulness in reducing the bulk and weight of a bouquet, is very serviceable when the stalk of a blossom is short, as in the case of some rare stove plants, many Orchids, and, indeed, any plant whose appearance is likely to be affected by hard cutting; but as no plant can be very materially injured by retaining an inch or two of stem to its blossoms when cut, so the use of wire must allow of a greater number of the more rare and choice kinds of flowers being employed than would otherwise be possible.

As regards the arrangement of the flowers, while avoiding the formal appearance of regular circles, two methods of equal excellence may be pursued. The first of these consists in blending together a number of flowers, with a due proportion of their buds and foliage, whose forms and colours best tend to produce a pleasing whole. The second consists in arranging side by side masses of colour, each mass containing three or more flowers of the same kind, and these masses are interspersed with the fronds of Ferns or other suitable foliage. By this method a much bolder effect is secured, while too much formality is avoided.

But although bouquets for the hand undoubtedly demand skill on the part of the maker, yet their formation, I think, ranks second in importance to the bouquet for the vase, flower table, or basket, which, when once dressed and placed in the elegant boudoir or stately drawing-room, has to pass through the ordeal of a daily criticism till the flowers fade. In an arrangement of flowers for this purpose, due regard must be paid to the form of the vessel to be decorated, as well as the place it is to occupy when the arrangement is completed. A large, tall vase for a centre table should contain larger flowers and a bolder mass of colour than one which is to occupy a position of less importance; but in using strong colours, all tendency to glare or heaviness has to be particularly guarded against; the flowers should not be crowded, but should be gracefully relieved by their buds or foliage. I have frequently, after dressing a vase, found it desirable to remove a flower or two at parts which have become so crowded as to appear heavy; for in arranging flowers in vases, water only can be used, and as the flowers have no support for their stems, it is at times a difficult matter to arrange them satisfactorily.

With flower tables or baskets this difficulty is avoided, as, generally, sand can be used. Few more beautiful objects can be seen in a drawing-room than a well-arranged flower stand, or table with a circular top about 2 feet in diameter. I can remember seeing two such stands about the same in size, but with no other resemblance whatever. One, a mass of gilt and glitter, had its gaudy flower tray curiously upborne on the head of a Cupid; the tray was not filled with cut flowers, but with four or five tall plants, altogether presenting a singular and ungraceful appearance. What were the accessories of the other table I am unable to say, as I saw nothing but its exquisite arrangement, the materials employed being a few choice flowers of bedding *Pelargoniums*, *Roses*, and *Liliums*. These flowers were thus arranged:—Around the edge of the tray was a broad fringe of green leaves, next these came a circle of *Pelargonium*, then a circle of medium-sized *Roses* not fully expanded, and the top or centre was occupied by a few blossoms of *Lilium lancifolium rubrum*, interspersed with fronds of Maiden-hair Fern. None of the flowers touched its neighbour, for although each flower contributed to the appearance of the whole, yet each was a perfect gem in itself, whose glowing brightness was agreeably softened by its setting of living green. The *Pelargonium* trusses rested on a bed of moss, a few sprays of which were visible between and around the flowers, while the *Roses* nestled in their own beautiful foliage. And here I would observe that most flowers appear to the best advantage when accompanied by their own foliage. What can be more exquisitely beautiful than a vase of the blossoms of *Lily of the Valley*, interspersed with, or springing out of its own foliage? or a bouquet of Sweet Pea, with its graceful shoots and tendrils? The pure white blossoms of *Eucharis amazonica* always seem most pure and lovely when seen in company with the plant's own deep green leaves, and a truss of sprightly *Oncidium* always more fairy-like when seen springing out of its own somewhat stiff foliage.

Of the forms of vases, I may observe that almost any form may be rendered pretty if its design be natural.

My concluding example shall be a soup plate filled with choice Hollyhock blooms. Form a raised mound of damp sand in the centre of the plate, fringe its edge with well-matched Hollyhock leaves, conceal the sand with a thin layer of moss, and cover the whole of the mound with flowers, with their lower sides resting close on the moss. In this way a pretty effect is gained.—EDWARD LUCKHURST, *Egerton House Gardens, Kent*.

ORCHARD-HOUSE FAILURES.

I HAVE many inquiries this season as to how my orchard house is getting on this year, or rather orchard houses, for I have several of them. Well, they are nearly a total failure. There is a pretty admission for a man to make who has for years thought, and I am afraid said, those who could not insure a crop of Peaches under glass must be muffs. Having had only one partial failure in about twenty years, and that supposed to be from bad management, the cause of which was known, all idea of a total failure seemed out of the question.

My Peaches and Apricots set very thickly, and I told all who asked about them, I had a better crop than usual, particularly of Apricots, and was astonished to hear all my friends say they had no fruit at all in cold houses. On my return home after a week's journey, what was my surprise to find nearly all the fruit had fallen off. The trees were in perfect

health, and excepting being bare of fruit looked beautiful. I think there can be no doubt as to the cause. I cannot hear of a single house without artificial heat, where a crop is to be seen, whilst those who, like Mr. A. Bass, of Burton, could give a little heat when the trees were in bloom, have a good crop. I hear his trees are better than ever, so they must be well worth a long journey to see. Whilst Peaches were in bloom there was a total absence of sun, and a cold, damp atmosphere. The pollen was like paste, and the blooms were unfertilised. A little artificial heat to dry the air would have saved the crop. Indeed, I saw the other day a tree full of fruit against a door opening into a warm house, whilst every other tree in the house was bare.

Now, what are the practical deductions from this nearly universal failure? First, that no one need be unduly cast down at his want of success. Secondly, that some of us have a fine opportunity and plenty of room for the cultivation of "that rare but lovely flower humility." Thirdly, that those who wish to make safe for the future, and can afford it, had better put pipes in their houses, and be careful how they use them. J. R. PEARSON, *Chilwell*.

PALMS.—No. 2.

A FEW of the most distinct and handsome are as follow. Those distinguished with an asterisk (*) are suitable for a greenhouse.

ACANTHOPTERIX CRINITUS.—Stems and petioles armed with black needle-shaped spines. Leaves pinnated, arched, very graceful.

ARECA ALBA.—Stem whitish, a white line in the centre of the leaflets.

**A. AUREA*.—Stems yellowish, and yellow lines in the centre of the segments of the leaves.

**A. BAURI*.—Stem ringed or freckled with brown; brown along the petioles. Foliage elegant.

A. RUBRA.—Leafstalks reddish, red midribs; leaflets green, tinged with red.

A. RUBRA PURPUREA.—Bolder than *A. rubra*, having red stems, and a distinct red stripe or midrib in the centre of the leaflets. The leaves of the *Arecas* are pinnate.

ARENOA SACCHARIFERA.—Foliage green, bold and fine, pinnated.

**ASTROCARYUM MEXICANUM*.—Stalks spiny; leaves broad, divided into two or three pairs of unequal-sized leaflets, white underneath.

BACTRIS MARAJA.—Rachis and leaf-surface spiny, leaflets broad.

BRAHEA DULCIS.—Stalks smooth and slender; leaves fan-shaped, finely divided, shining, and handsome.

CALAMUS DISPERsus.—Slender but elegant. Leaves pinnate; leaflets linear-lanceolate; stalks rugged, with numerous short, pale-coloured spines.

C. IMPERATRICE MARIE.—Habit slender; leafstalks spiny.

C. JAVANICUS.—Stalks spiny; leaflets numerous and narrow; habit slender, but having a fine plumose appearance.

C. LUISIANUS.—Leaves elegant but short, pinnately divided. It is of free growth.

CARYOTA PRENS.—Handsome foliage, distinct and fine.

**CHAMEDOREA PANICULATA*.—Stem green, erect-growing, tall. Leaflets short, distinct, and grass-like, fine.

**CHAMEROPS PALMETTO*, **C. FORTUNEI*, **C. EXCELSA*, and **C. HUMILIS*.—These succeed in a greenhouse, and have fine fan-shaped leaves more or less divided.

**C. MELANACANTHA*.—Stalks slender, furnished with dark-coloured spines. It is an elegant small-growing sort with fan-shaped leaves. Probably a variety of *C. humilis*.

**C. STAURACANTHA*.—Leaves very finely set on long slender stalks, and divided into distant long segments. Fine.

**Cocos AUSTRALIS*, *C. BONNETI*, and *C. CAMPESTRIS*.—Distinct and fine.

C. CORONATA.—Stalk cream-coloured. Leaves broad, almost entire, but slightly divided at the ends, where they arch or droop gracefully. Very fine.

**CORYTHA AUSTRALIS*.—Stalk slender; dark green, shining, roundish leaves. Fine.

**C. DULCIS*.—Stems slender and erect. Leaves large and roundish.

DEMONOROPS HYSTRIX.—Leaves much divided. Graceful habit, bright green.

D. MELANOCHETES.—Stem black-spined. Leaves bright green, much divided.

D. PLUMOSUS.—Stem brown; spiny leafstalks. Leaves much divided. Fine.

ELAIS GUINEENSIS.—Leafstalks with hooked spines; leaves bold, bright green. It furnishes the Palm oil of commerce.

GEONOMA GIESBRECHTII.—Stem smooth. Leaves irregularly pinnatifid, bilobed at the apex, with the two terminal segments prolonged into a tail-like point.

GEONOMA IMPERIALIS.—Slender stalks. Smooth pinnate leaves; leaflets narrow. Elegant and fine.

**G. SCROTTIANA*.—Leaflets long and narrow, bright green, distinct.

G. SEEMANNI.—Petioles angular; bilobed plaited leaves, terminating in two sharp-pointed divisions, having a fish-tail outline. In a young state it is of close leafy habit. Beautiful, dwarf, and distinct.

HYOPHORBE AMARICULIS.—Petioles red. Leaves pinnate, with alternate acuminate segments, bordered with a reddish line. Very fine.

H. VERSCHAFFELTI.—Leaves pinnate, nearly erect, but arching gracefully at the top; segments linear-lanceolate. The back of the petiole is marked by a golden-coloured band. One of the finest.

IRIARTEA EXORRHIZA.—Stems slender, leaves pinnate. Very remarkable for having a stilted appearance from the adventitious roots.

LATANIA BORBONICA.—Leaves fan-shaped, graceful. A noble Palm.

L. LONGICUS.—Stems reddish. Leaves fan-shaped; segments green with red edges, slightly serrated. Distinct and fine.

LEOPOLDINIA PULCHRA.—Slender habit. Leaves pinnate, on smooth stalks.

**LIVISTONIA ALTISSIMA*.—Stalks short, evenly set with spiny projections at the margin. Leaves palmate, divided into numerous narrow segments. Remarkably elegant.

**L. HUMILIS*.—Glaucous green, finely divided leaves; segments long and graceful.

OREODONTA REGIA.—Slender erect habit. Leaves pinnate; narrow drooping leaflets. Very pleasing.

**PHOENIX DACTYLIFERA*.—Leaves finely divided; leaflets long and narrow.

P. LEONENSIS.—Leaves of a dark shining green; the leaflets have a white cottony edge, and are strung with threads when unfolded or in a young state. Distinct and fine.

**P. RECLINATA*.—Leaves finely divided and grass-like.

**P. SYLVESTRIS*.—Leaves shining bright green; leaflets with reddish margins. Foliage grass-like.

PIRANGA MACULATA.—Leaves broad, divided into unequal segments, so as to become irregularly pinnate; the colour bright green, freely blotched with dark olive green.

PRYCNOSPERMA ELEGANS.—Leaves broad, bilobed, fish-tail-like. Stalks smooth, erect. Fine.

P. LACINATA.—Habit close and dwarf. Fronds bilobed, the lobes laterally split at the apex. Fine.

P. REGALIS.—Broad, bilobed, almost entire leaves; stalks smooth, prettily tinged with red in the young fronds.

RHAPHIA TEDIGERA.—Stem cylindrical; leaves arching and pinnate, with narrow lanceolate spinulose leaflets. Very elegant.

**RHAPHIS FLABELLIFORMIS*.—Erect stems; leaves dark green, and divided. Of moderate growth, and endures dry air and dust well.

**SEAFORTHIA ELEGANS*.—Leaves pinnate, bold and fine.

STEVENSONIA GRANDIFOLIA.—Stems and stalks abundantly furnished with brown needle-shaped spines; leaves broad, bilobed, incisely toothed at the ends. A noble species.

THRINAX PARVIFLORA.—Leaves fan-shaped, distinct.

VEITCHIA JOHANNIS.—Stalks long, erect, of a silvery white, marked with dark blotches, the surface scurfy; leaves pinnate, arching finely.

VERSCHAFFELTIA SPLENDIDA.—Stems furnished with spreading spines, broad undivided bilobed leaves with serrated edges. It is also known as *Regelia majestica*.

ZALACCA WAGNERI.—Stem spiny, a white stripe on the under side of the petiole, red on the under side of the leaflets. Very fine.—G. ABNEY.

RUBUS ARCTICUS.

HAVE any of your correspondents ever fruited this elegant but neglected plant? I have seen it thriving in the open air as far south as Warwickshire, but no fruit ever set. Linnæus speaks of the fruit as delicious, and it is commonly preserved

in the north, though this preserve is not seen in our shops. The plant grows well near London in a pot, treated as an Alpine.—G. S.

SUMMER PINCHING FRUIT-TREE SHOOTS.

I must again in defence repeat the general recommendations given by me at page 367 in reference to this important operation. "Pinch the strongest shoots first," which are in general those situated at the top of the tree, and then in the course of four or six days repeat the operation on those the next lower down or the next stronger, and so on. I might have added, Keep the top part of the tree, which is always inclined to grow the strongest on account of the sap flowing more freely upwards, in subjection to the lower, so that a perfectly equal distribution of the sap and uniform action of its forces may be secured; for in this way and no other can a tree which is formally trained, or confined in its energies, be made equally fruitful throughout. Thus, practically with a horizontal-trained Pear tree on a wall with nine tiers of branches, I recommend the following method:—First operation: Stop the shoots on the three top branches to from two to four eyes, and merely arrest the progress of those on the next three branches, or any similarly strong-growing part, such as the shoots down or near the centre, by taking out their points, or, where very strong, reducing them to one-half. Second operation: Stop the shoots on the second three branches to from four to six eyes, and take the points off the others. Third operation: Rub the secondary shoots, if any have appeared, quite clean off the top branches, and stop the shoots on the last three to from six to eight eyes. The tree has thus to be gone over three times, and afterwards to keep down the secondary growths. With smaller trees so many operations may not be necessary, yet some require even more particularity in their manipulation. The theory and practice of the work are, however, still the same.

Your correspondent, Mr. R. Inglis (see page 403), says "it is a mistake" to follow the practice I have recommended, for "if the strongest" shoots "are to be pinched, then the weak ones should not be touched at all," and quotes a passage from "Johnson's Science and Practice of Gardening" in support of his ideas. "When it is necessary to stop all the shoots of a plant, the *weakest* ought to be first stopped, in order to get them stronger," &c. Now, this taken from such an authority, standing by itself, seems a very formidable argument to get over. It is, however, badly selected by Mr Inglis, and entirely misapplied. Mr. Inglis should have quoted at the same time the lines immediately preceding. "We stop the *strongest* shoots to arrest the current of the sap, and so force it into the *weaker* branches." Truly it requires nearly as much knowledge to read scientific books as to write them. Mr. Inglis should practice first and quote afterwards; then he would understand that pinching the growing shoots of a Laurel, when subsequent growth is desired, has no affinity to pinching the growing shoots of a fruit tree, where the desire is entirely to arrest the growth of shoots, and induce the formation of fruit buds at their base. "It is not" (quoting from the same paragraph), "to make a fruit tree more bushy that we stop the robbers." No; but to cause uniformity of action, and thereby fertility throughout.

Mr. Inglis gives a very good illustration of how dependant the roots of a tree are upon its leaves, in the case of his Cucumber plants. Leaves elaborate the sap which they receive from the roots, and return the same greatly altered, and otherwise influenced, into the stem to form woody fibre. The mere stopping of a shoot, the taking off or the destruction of any portion of its leaf surface, arrests the even flow of the sap in that direction, which is then directed towards the other parts not so disturbed. Strip the leaves entirely off a shoot, and there will be no further increase of wood on that particular shoot until new leaves have been formed. The stronger a shoot grows the more woody fibre does it form, and the more vessels for the ascent of sap, and its strength will just be in proportion to its leaves; therefore by reducing its leaf-power we arrest the flow of sap, and diminish its luxuriance.

My remarks apply entirely to fruit trees, although I may say I should be inclined to follow the same practice in regard to almost every class of plants, with few exceptions. Where a mere bush is wanted the theory "of stopping the weakest shoots first in order to get them stronger" may in some instances apply. It is a pretty theory to have the buds on the weaker shoots ready to push on the stronger being stopped, yet it will not hold good always. Some shoots are occasionally so

weak in comparison to the others that they will never push at all; the strong shoots being unchecked push all the stronger, and when stopped they are in possession of so much pent-up force that nothing can restrain them. If the difference between the shoots be not very great, and all nearly similarly situated, subsequent growth being desired, then it will answer to pinch the weaker shoots first, and the stronger afterwards. But in fruit culture another end is aimed at, and to achieve success we must take the other card, and "pinch the strongest shoots first."—ARCHAMBAUD.

MANCHESTER EXHIBITION OF THE ROYAL HORTICULTURAL SOCIETY.

We have to remind fruit growers of the two prizes amounting to *Twenty Guineas*, offered by the Proprietors of this Journal, at the meeting of the Royal Horticultural Society at Manchester on the 19th of July. Two prizes of the value of ten guineas each are offered for "the best two desserts consisting of not less than seven kinds of fruits of 1869, arranged as for the table, and combining quality of fruit with taste in arrangement." No award will be made if the judges consider the exhibitions unworthy of the prizes.

We have had several letters requesting information on some of the details. One asks if Black and White Grapes would be admitted as separate dishes. We answer, yes; but of all other kinds of fruits, only one dish of each will be admitted. As regards the number or quantity of fruit in each dish, that must be left entirely to the taste and judgment of the exhibitor. A large number of indifferent fruit would not certainly be successful against a smaller quantity of that which is greatly superior; and neither would a greatly insufficient quantity of superior fruit take the precedence of a sufficiency of that which may be of meritorious growth. The taste of the exhibitor must be shown in this as well as in the setting-up and arrangement of his collection.

Although seven dishes are mentioned as the *minimum*, any greater number may be shown, so long as they consist of different kinds (not different varieties) of fruits, with the exception of Grapes, of which White and Black may be shown.

Every exhibitor will be required to find his own dishes or fruit-stands; and he is at liberty to make use of any design or arrangement he may think proper.

The prizes are open to competition between amateurs and gentlemen's gardeners only.

NEW HOTHOUSE BOILER.

AFTER reading Mr. Pearson's previous article upon bothouse boilers, I have been waiting somewhat anxiously, and with as much patience as I could command, to hear something further respecting the one concerning which he had formed such a high opinion. Mr. Pearson has at last fulfilled his promise and gratified my curiosity (see page 391).

As was to be expected, this new boiler is set down as being the very best that was ever invented or brought before the public. Like all other new things, it possesses every point that is desirable, is happily free from all that is objectionable, and is the very acme of perfection. Indeed, the advance upon all other kinds is so great, that as nearly as possible it heats the water without any fuel at all—"A mere handful of fire made the water in 600 feet of 4-inch pipe quite hot while I was at dinner; and so rapid was the circulation, that on turning a valve connecting 200 feet more of piping in a frame, the return pipe was quite hot in ten minutes." It has "comparatively nothing to do;" and "I intend to add 600 feet of piping to it, and then I think it will be far more than sufficient for its work"—viz., 1400 feet of 4-inch pipe. Well, I am sure we shall all feel grateful to Mr. Foster for his invention, and also to Mr. Pearson for so generously making it known to the public; but the inevitable impression made upon the mind when reading the above quotations is that Mr. Pearson in his enthusiasm has gone too far. I do not know what sized hand Mr. Pearson's may be, but if it is anything like the hand of an ordinary mortal, then I venture to assert that it will not hold sufficient fuel to heat the water in 800 feet of 4-inch piping. Would a mere "handful of fire" boil an ordinary tea-kettle when full? But perhaps Mr. Pearson by mistake wrote the word "hand" instead of "shovel," and meant to say that a "mere shovelful," &c. If so, I still dispute the fact. One shovelful of fuel under a boiler 3 feet 9 inches long would not make the water

in 600 feet of pipe "quite hot" while Mr. Pearson "was at dinner." But this last phrase is rather vague. How much time does our friend require for his dinner? Was it just the period occupied in taking the midday meal—some twenty or thirty minutes? or was it the full hour generally allowed for that purpose? or did it include an easy lounge or gentle nap, covering perhaps a couple of hours? Perhaps Mr. Pearson will enlighten us on these points.

Not a few of these extraordinary productions have been brought before the public of late, each in its turn destined to eclipse all others, but after a brief run they have sunk into oblivion; and now in the year 1869 we find the great majority of practical men, and those with the most extensive experience, prefer the old saddle or some of its modifications to any other kind in the market.—JOHN TAYLOR, Lancashire.

CRYSTAL PALACE ROSE SHOW.

JUNE 19TH.

Few persons who have had the pleasure (or pain, as they may perhaps regard it), of looking at the Rose trees in their gardens this summer, could have anticipated anything of a show so early in this wintry month of June, which has sent us all back to our firesides, put an extinguisher on croquet, and compelled many of us in whose veins the blood does not run quite so warmly as it did twenty years ago, to don our greatcoats. When we recollect what this month has been—the cold frosty nights, the bitter, desolating, blackening east winds, the rain and sleet, and the utterly useless, thick foggy days that we have had—what could we do but shrug our shoulders when we heard of the Roses that were to make their *début* on the 19th? The buds remained hard and unopened, the foliage was discoloured, and they generally showed how unkind and ungenial they felt the month to be. There was but one point on which we could take any comfort, and that was that if Roses were there they would be in character, and that the cool cloudy weather would be favourable to their retention of colour. Last season all colour was bleached out, it was difficult to distinguish one Rose from another, and of some of the best and most highly coloured sorts not a single good bloom was to be seen in any of the stands. This year it is not so. Each Rose displays its beauties in proper state, and one familiar with Roses has no occasion to ask, What Rose is that? So last year it was hopeless to say a word about new Roses. But few were exhibited, and of those few it was clearly to be seen that nothing could be predicated, while I do not believe that a better stand of new Roses was ever set up than that exhibited by Messrs. Paul and Son, of Chesham, at the present exhibition; and as it is needless now for me to go through the details of the different stands exhibited, my observations will be confined to the new Roses. I may say, however, that although the exhibition as a whole suffered from the season as far as quantity was concerned, yet it was far better than most persons could have anticipated even in that respect. I was greatly grieved to miss our great amateur exhibitor, Mr. Hedge, of Colchester, and still more grieved to hear that his absence was occasioned by illness, and that there is little expectation of his ever taking the field again—certainly not as he has done. He will, I am sure, have the sincere sympathy of all true rosarians, and, indeed, of all who knew him. Other exhibitors are coming forward, the field is enlarging, and the queen of flowers is evidently increasing in popularity.

The following are the names of the new Roses of 1867 and 1868—*i.e.*, of flowers first sold in those years—which were exhibited in Messrs. Paul's stand. Of 1867—Baron Haussmann, Charles Turner, Duke of Edinburgh, Elie Morel, Mlle. Christine Nillaon, Reine du Midi, Duchesse d'Aoste, Mlle. Marie Girod, Madame Noman, Madame Grandier, Vicomtesse de Vézins, La France, Souvenir de Madame Corval, Madame Barriot. Of 1868 (last autumn)—Souvenir de Mons. Poiteau, Céline Noirey, Reine Blanche, Madame Croyton, Adolphe Brongniart, Nardy Frères, Marquise de Mortemart, and Henri Ledochaux. In other stands were Baronne de Rothschild (1867), Madame Alice Dureau (1867), and Adrienne Christophe (1868).

In judging of these from the materials before me, I should say that of the Roses of 1867 Elie Morel and Baronne de Rothschild are the best. The former is a most beautifully delicate light rose with a clear pink edge, well formed, and fresh in colour; the latter is a lovely light-coloured Rose, light flesh colour changing to nearly white, very large, globular in form, and altogether a gem. Duke of Edinburgh is a grand high-coloured, scarlet rose, of first-rate qualities—a veritable English-raised Rose, not a French one let out by an English raiser. Vicomtesse de Vézins is very bright and good; La France, an admirable acquisition, and, as I can testify, most thoroughly free-flowering. Christine Nillaon I do not think much of. The same may be said of Baron Haussmann. Charles Turner is a reproduction of Mlle. Annie Wood, and, like it, a very beautiful deep carmine-coloured flower; Madame Alice Dureau and Madame Barriot, both good, but not remarkably so; Marie Girod, rough and rubbishy; Madame Noman, a pretty Rose, in the style of Virginal, Mlle. Bonnaire, &c. Madame Grandier is large, but not remarkable; Reine du Midi, disappointing; Souvenir du Madame Corval, bright salmon, but not to be retained, I fancy.

Of the 1868 Roses, I regard Madame Croyton as one of the best. It

is a large shell-petaled flower, of a peculiar claret rose colour, if such a thing can be imagined, quite distinct in colour, and I believe, as far as one can judge, indispensable; it is, I think, one of Gonod's raising. Souvenir de Mons. Poiteau, although having some of that roughness which characterises most of Margottin's recent productions, is a very distinct in colour and must be grown. Reine Blanche is a beautiful light (very nearly white) flower. Adolphe Brongniart does not promise much. Nardy Frères is a peculiar-looking flower, but at present not very taking. Céline Noirey and Adrienne Christophe, are two beautiful Teas; and Marquise de Mortemart is a very delicate light-coloured flower, which promises to be a favourite. I hope to have some further opportunities of seeing and reporting on the new Roses, and only write now of what I have seen at this Exhibition; judgment may be altered or modified by mere enlarged acquaintance.

Two seedling Roses were exhibited—Edouard Morren, by Messrs. J. & C. Lee, and Princess Christian, by Mr. W. Paul. The former looks like a lighter form of Jules Margottin, but it was not exhibited in good condition; the latter is a very pretty light bluish rose, somewhat, I should imagine, of the same race as La France, having Tea and Bourbon blood in it. It received deservedly a first-class certificate. Another Rose, Prince Leopold, said to be a climber, was exhibited by the same gentleman. If it be really such, and not merely a vigorous Hybrid Perpetual, it will be an acquisition, although as a show Rose not much. There was another Rose, exhibited by Mr. Coppin, called the Rev. H. F. Farrer, which was promising, and of which one would like to see more by-and-by. I think we may look forward to more veritable English Roses than we have yet seen, and that we shall not be dependant on French raisers for novelties.—D., Deal.

Just one day later in the month than last year, and what a contrast in the weather! Last year complaints were loud and long of the scorching sun immediately preceding the Show, this year of the rain and cold; last year the effect was manifest in many of the varieties being driven out of character, and out of colour, this year in their diminished number, and in many instances their inferior quality. Such trusses, however, as those set up by Messrs. Paul and Son, Mr. Turner, and Mr. Cant, would have done credit to any exhibition, and in any year, and that there was no falling off in the public interest in the Rose, was evident from the crowds of visitors who hung about the tables during the afternoon, when the attendance could not have been less numerous than it was last year, though the day was by no means one of the most favourable.

In Class I, single trusses of seventy-two varieties, Mr. Turner took the first place with excellent examples of Leopold Haussberg, Charles Rouillard, Princess Mary of Cambridge, Marie Baumann, Victor Verdier, Mlle. Thérèse Levet, Dr. Andry, Marguerite Dombrier, Gloire de Dijon, Général Jacqueminot, Madame Boll, Madame Vidot, Sénateur Vaisse, Monsieur Boncenne, La France, Jean Gonjon, Madame Willermoz, Triomphe de Caen, Maurice Bernardin, Horace Vernet, Abel Grand, Felix Genero, quite a rosy-violet globe; Duc de Magenta, yellow; Miss Ingram, Jules Margottin, Prince Camille de Rohan, very fine; Maréchal Niel, splendid; Madame Furtado, Madame Victor Verdier, Camille Bernardin, Rubens, Gloire de Ducher, very large, but coarse-looking; John Hopper, Exposition de Brie, Lord Raglan, splendid; General Castellane, and others. Messrs. Paul & Son, who were second, had also a fine collection, in which the following were noticeable—*viz.*, Souvenir de Monsieur Boll, Madame Furtado, Maurice Bernardin, Victor Verdier, Madame Charles Wood, Antoine Ducher, John Hopper, Duke of Edinburgh, a most splendid scarlet Rose, which was seen in great perfection in other collections, and attracted much attention; François Treve, Abel Grand, Madame Rivers, Joseph Fiala, Xavier Olibo, and others already named. Mr. Mitchell, of Piltown, was third; Mr. Keynes, of Salisbury, fourth; and an extra prize was awarded to Messrs. Francis, of Hertford.

The next class was for forty-eight, three trusses, and in it Messrs. Paul were first with a rich display, conspicuous in which were trusses of Duke of Edinburgh, François Lacharme, Charles Rouillard, Pierre Notting, Exposition de Brie, Mlle. Thérèse Levet, Vicomtesse de Vézins, Dr. Andry, Madame Jolie Daran, Madame Furtado, splendid, Prince Camille de Rohan, Madame Clemence Joigneaux, Michel Bonnet, very bright, Maurice Bernardin, Victor Verdier, Madame Rivers, Olivier Delhomme, Antoine Ducher, Abel Gonod. Mr. Turner came in second with Dr. Andry, Charles Lefebvre, Madame Charles Crapet, Camille Bernardin, Marie Baumann, Jules Margottin, Louise de Savoie, Alfred Colomb, Paul Verdier, Thérèse, Prince Camille de Rohan, Sénateur Vaisse, Lord Raglan, fine in colour, Pierre Notting, La France, Exposition de Brie, John Hopper, and Princess Mary of Cambridge. Mr. Keynes, who was third, showed good trusses of Marguerite de St. Amand and others; while Mr. Mitchell, who was fourth, had splendid trusses of Maréchal Niel, which was everywhere good, and Lamarque.

The next class was for twenty-four varieties, three trusses. Here Messrs. Paul & Son took the lead with excellent stands, containing Mr. Hopper, Charles Rouillard, Dr. Andry, Madame Rivers, Madame Willermoz, Madame Clemence Joigneaux, Duke of Edinburgh, splendid; Prince Camille de Rohan, Madame H. Jacquin, Madame Charles Wood, Mlle. Thérèse Levet, Charles Lefebvre, Marguerite de St. Amand, Victor Verdier, splendid; La France, and Devonshire, Mr. Turner was second with Miss Ingram, Marie Baumann, Louise de Savoie, very fine; Mlle. Thérèse Appert, Princess Mary of Cam-

bridge, Souvenir de Comte Cayour, Gloire de Dijon, Victor Verdier, Charles Lefebvre, and several of those already named, in excellent condition. Mr. Keynes, who was third, had also fine trusses.

In the class for single trusses of the same number of varieties, Mr. Cant was first, and had fine examples of Pauline Lanzezeur, Vicomtesse de Vézina, Vicomtesse de Cazes, John Hopper, Souvenir d'Elise, Baronesa de Rothschild, Lord Raglan, Charles Verdier, Prince Camille de Rohan, Comte de Nanteuil, Maréchal Niel, Baronne Prevost, Dr. Andry, La France, Madame Bravy, Xavier Olibo, and Général Jacqueminot. Mr. Keynes was second, Mr. Turner third, and Mr. Mann, Brentwood, fourth.

In the amateurs' classes there was a great falling off, many of the blooms being small, and, though well coloured, evidently suffering from the weather. The best forty-eight came from Mr. Moffat, gardener to Earl Rosslyn, Easton Lodge, Dunmow, and comprised good trusses of Maréchal Niel, Xavier Olibo, John Hopper, Madame C. Crapet, Charles Lefebvre, and Cloth of Gold. Mr. H. Exell, gardener to J. Hollingworth, Esq., Maidstone; Mr. T. Terry, gardener to A. G. Puller, Esq., Youngsbury; and Mr. J. Moore, gardener to T. Lloyd, Esq., Warwick, took the other prizes. Mr. Chard, Mr. Bristow, Mr. Johnson, of Uxbridge, and the Rev. R. C. Hales, also exhibited in this class.

Class 6, was for thirty-six varieties. Mr. Stoddart, gardener to J. G. Rebou, Esq., Wivenhoe Park, was first, with good trusses of Maréchal Niel, Devonensis, Beauty of Waltham, half expanded but very pretty, and John Hopper; together with fair specimens of Madame Charles Wood, Maurice Bernardin, Souvenir de Malmaison, Charles Lefebvre, Lord Clyde, Gloire de Dijon, Jolea Margottin, and Duchess of Sutherland. Dr. Cooper, Slough, was second with showy examples of Adolphe de Rothschild, Le Rhone, Gloire de Santenay, Victor Verdier, Niphotos, and several of the kinds just named. Mr. Exell took the third place, and Mr. Chard the fourth. Mr. Moffat would have been third had he not set up by mistake two of Maréchal Niel.

In Class 7, twenty-four varieties, the prizes went to Mr. Stoddart; Mr. Soder, gardener to O. Hanbury, Esq., Brentwood; Mr. Moffat; and Mr. Exell. The other exhibitors were Dr. Cooper, Mr. Johnson, Mr. Moore, Mr. Chaff, Mr. Wallis, and Mr. Scarfe.

In twelve, Mr. Soder was first with brightly-coloured flowers of Maréchal Niel, very fine; Senateur Vaisse, Madame Charles Wood, Duc de Rohan, Duke of Wellington, Marguerite de St. Amand, Madame Boll, and Triomphe de Rennes. Mr. Cant, Myland Lodge, Colchester, was second with a very good stand, in which, besides some of the above, Achille Gonod, Général Jacqueminot, Pauline Lanzezeur, and Marguerite de St. Amand, were noticeable. Mr. Ingle, gardener to Mrs. Round, Colchester, was third; and Mr. Postans fourth. Messrs. Queenell, Thormicroft, Cook, May, Skinner, Bridge, Stoddart, Moffat, and Bristow also sent stands.

The best collection of Roses of any variety came from Messrs. Paul and Son, and was very numerous and fine, and Mr. Chard had the second prize. The best collection of Yellow Roses was that from Mr. Cant, of Colchester, and included fine trusses of Madame Falcot, Vicomtesse de Cazes, Adrienne Christophle, new and fine; Madame Margottin, Bonle d'Or, Maréchal Niel, and Safrano. Cloth of Gold, from Mr. Cant, of Myland Lodge, Colchester, who was second, was remarkably fine. The third and fourth prizes went to Mr. Stoddart and Mr. Keynes respectively. The latter had Adrienne Christophle, with a rich coppery tinge.

Among Tea-scented and Noisette Roses there were excellent trusses of Lamarque, Devonensis, Maréchal Niel, Goubault, Rubens, Madame Willermoz, Alba Rosea, Céline Forestier, Vicomtesse de Cazes, Souvenir d'un Ami, Madame de St. Joseph, Triomphe de Rennes, Madame Bravy, Solferino, and Niphotos, from Messrs. Paul and Son and Mr. Cant. In the nurserymen's class, and from Mr. Exell and Mr. Postans in that for amateurs. Third prizes were awarded to Mr. Parker, Nurserymen, Rugby, and Mr. Bristow; and equal fourth prizes to Mr. Ingle and Mr. Cant, of Myland Lodge.

The prize for the best one hundred flowers of any Rose in a decorated vase or basket, was taken by Messrs. Paul & Son, with Marguerite de St. Amand, in a flat basket concealed by the variegated Acer Negundo and Ferns. Mr. Turner was second with a neatly arranged pyramid; Mr. Parker, third, with Gloire de Dijon in a huge bowl, with a double row of the same Rose fringed with Fern fronds round the bottom.

In the miscellaneous class, prizes were given to Mr. Turner, of Slough, for a fine collection of Pinks and cut blooms of Pelargoniums; to Messrs. Paul & Son, for Roses in pots, in addition to the first prize for twenty new Roses in 8-inch pots; to Messrs. Downie, Laird, and Laing for a collection of splendid Bicolor Pelargoniums noticed beneath, the same firm also showing a basket of W. R. Morris, with a glowing bronze-red zone, very fine; and to Messrs. Carter & Co. for double and Tricolor Pelargoniums. A first-class certificate was given to Mr. Gordon, of the Crystal Palace, for Tropaeolum Spotted Gem, yellow, with rich dark crimson blotches, the plant about 18 inches high, and free flowering. Mr. Mann, Brentwood, sent likewise a small collection of Lord Derby, Countess of Derby, and other Zonal Pelargoniums in flower, and a basket of Tricolor Masterpiece.

I WILL leave to "D." of Deal, and to your reporter to give an account of the very fine Exhibition of Roses staged on Saturday last,

which, in my opinion, though not equal in point of numbers, either of Roses or exhibitors, to that of last year, was far superior in point of freshness of colour and depth of tints. I would, however, especially call attention to the seedling Bronze Zonal Pelargoniums exhibited by Downie, Laird, & Laing at the end of the amateurs' Roses. These seem to be an immense stride in advance of any other strain, though, I believe that owing to the quantity of seed that was ripened last summer, many of our leading nurserymen have a very fine collection to adorn our bedding-out gardens in future seasons. Noticeable among the seedlings exhibited by Messrs. Downie, Laird, and Laing was one which they intend naming after the Viceroy of Egypt, and which will again be sent to the Palace on the occasion of the Viceroy's expected visit on the 29th of this month. It has great substance and smoothness of leaf, a well-defined centre, and an even golden margin; the zone itself being a pure deep bronze, not too black, and not overpowering the golden part as in some sorts. Two others alongside of it were, in my estimation, equally good, and others which will not be sent out will prove very valuable as parents to obtain pollen for cross-breeding.—C. P.

YORK HORTICULTURAL SHOW.

THIS Show, which follows Manchester and Leeds, and ranks next in importance to them among the great northern flower shows, took place on the 16th, 17th, and 18th inst. The morning of Wednesday opened most inauspiciously; the storm which raged on the north-east coast also visited the city of York most severely, and tested the strength of Messrs. Fussey's tents to the utmost. The cold, too, was intense, and the temperature much more like that of an early day of March than the middle of June. Exhibitors were anxious, therefore, to keep their plants in the shelter of the waggon till the last; but with all the precautions, it is to be feared that many valuable plants will have suffered—in fact, before twelve o'clock, we saw one very fine specimen of Caladium Bellemisii a mere ghost of its former self, and another large plant of Clerodendron Thomsonae Balfourianum also seemed much injured. In spite, however, of all these drawbacks, the tents by eleven o'clock were well filled with one of the finest collections of plants we have seen staged at York, or we might say at any large horticultural show; and great praise is due to the Committee and their Secretary, Mr. Wilson, for the excellent arrangement of the tents and the general efficacy of the management.

Mr. Baines was again to the fore with his fine specimens of stove and greenhouse plants, and also with ornamental-foliaged plants. Especially noticeable among the former were Genetylis tulipifera and Bougainvillea glabra, but where all were so good it is difficult to particularise. Only second to Mr. Baines was Mr. Dixon, of Beverley, who showed amongst other things a splendid specimen of Anacardilos Lowii. Mr. Cole again exhibited his very fine Heaths, and it is seldom we have ever seen them in greater perfection: the colder weather of this spring seems to have suited them, and both their bloom and foliage were magnificent.

The Pelargonium tent was well filled. The specimens in many cases were very large, but a little rough; the same may be said of the Fuchsias which were rather heavy, with the exception of those from Mr. Edwards, of York, who certainly exhibits them in great perfection. There are, however, few plants that suffer so much as Fuchsias in their transit to a show, and the same plants which we may admire in a conservatory one day will often exhibit a miserable appearance on the show ground the next. Noticeable in this tent were six Zonal Pelargoniums from Sir George Wombwell, of Newburgh Park, especially Clipper and Mrs. W. Paul. We have never seen so fine a specimen of the latter before.

The double Pelargoniums were, as in our opinion they will be for many years, a miserable failure—coarse heavy foliage, rough flowers, and very few of them. It will be long before a double Zonal Pelargonium can ever become a florist's flower—in fact like both a Pansy and a Petunia, as soon as the petals multiply all the beauty of outline and form is lost. A double Zonal Pelargonium is a good trade flower, and as a novelty within the reach of all amateurs will be much run after, and being both easily propagated and easily wintered will no doubt have its day, but we much doubt, if with all the improvements it may receive from the hands of cross-breeders, it will ever become a perfect flower. Even the stand of those shown by Messrs. Carter at the Crystal Palace on the 19th inst. did not contain one flower which, taken by itself, had either form or symmetry.

There were some very fine plants of Tricolors in the Pelargonium tent, especially Sunray, Jetty Lacy, which seems to have improved in constitution, Lady Cullum, Achievement, and Retaliator. Bronzes were also good, but were much eclipsed by some seedlings exhibited by Downie, Laird, & Laing, amongst which Crown Prince was especially worthy of honours. The same firm also exhibited a splendid stand of cut blooms of Belgian Pansies; this strain seems now to have reached its utmost limit in point of colour. The pip (?) which began about quarter the size of the whole flower, is now nearly three-fourths, and seems almost reversing its position as regards the show varieties. All that is now wanted amongst the Belgian strain is a little more stuntness of petal and smoothness of flower, and this can only be obtained by careful crossing.

Amongst cut flowers, the stands of Roses exhibited by Messrs. Paul and Son, of Cheshunt, were especially fine, in fact, we have scarcely

ever seen a better stand of twenty-four trophies than theirs set up at any show, even by Messrs. Paul & Son, and we might particularly remark that the Pink section of Roses were very well represented by Elie Morrell, Monsieur Noman, Marguerite de St. Amand, Mlle. Thérèse Levet, Centifolia Rosea, and in their stand of twenty-four singles, Modèle de Perfection, besides others. Amongst amateurs, Mr. Perry, of Castle Bromwich, exhibited well, and also showed some of his splendid seedling Verbenas. Where there is so much to praise we regret also to have to criticise, but we cannot pass over in silence the judgment as to cut Verbenas; Mr. Perry's having been placed second to a very inferior collection exhibited by Mr. Dove, and the only way we can account for it is that Mr. Perry had raised his above the stand so as to show the roundness of the truss, while Mr. Dove's were pushed down upon the circular paper on which they were mounted; but we are certain that if the pips on the trusses were counted, that there would be double the number in Mr. Perry's collection, and in our opinion the worst truss in his was better than the best of Mr. Dove's. The judgment in the class of twelve Roses (amateurs), was also had; but with these exceptions the general judgment was correct.

Our space will not permit us to give a more enlarged account; we can only conclude by wishing the Society to continue to progress and prosper under its present able management.—C. P.

THINNING THE STEMS OF POTATOES— GRAFTING SETS—RAISING SEEDLINGS.

SOME weeks ago I was with two editors looking over a fine place. They were on notes intent, and jealous of my comparative idleness, I presume, for one of those chiefs said—U., "Do give us some poetry!" and the other, O., "Do write us something. Give it in the lively manner that was once your wont in the old COTTAGE GARDENER." "My dear good fellows," I answered, "that style of mine was abandoned years ago. Pray do not request of me now anything of the sort. It is, doubtless, my own fault; I have presented all I ever knew or ever did in the horticultural way to the public for twenty years and more, and now I begin to fear that my writings are thought stale." "A man," was the rejoinder, "should never appear as a public adviser or writer for a longer period than ten years."

Now, how can I help myself? Why, I actually jumped over the garden wall, left experiments to Fate, and went to Savernake Forest, to be on "the quiet" for a few days last week, in order to "knock off" a bundle of unanswered private correspondence on the subject of the present season's behaviour in regard to Potatoes. In the meantime I managed to run up to London to the Royal Horticultural Society's Fruit Committee, of which I happen to be an unworthy member, to exhibit samples of Potatoes, so that the public might run and read, and I could refer your correspondent, "J. W. C.," to advice which I gave in these pages longer ago than I care to "bark back" to, on the very subject he now writes about, so I beg to inform him that it is good practice "to pull away" the stems of Potato haulm when too many of them appear.

One eye to each set is sufficient to secure a fine even crop when the seed is properly prepared, as I will presently point out for the benefit of "J. W. C.," but under the present circumstances I advise him to leave three or four of the strongest stems to each stool, and by delving with his fingers 2 or 3 inches into the soil, to separately remove each weakly super-numerary shoot by a steady, straight, even pull, as one would draw a 3 lb. trout from the edge of a stream—minus a landing net. Disconnect the spray as near as possible to the tuber. "Three feet," or any other distance between the rows, will not counterbalance the inevitable result of a too crowded and weakly group of stems, which must be partly a crop of small unmarketable Potatoes.

"J. W. C.," need not be troubled in future in fishing out small spray, if he will adopt a preparation for his seed as follows:—At lifting time let him select medium-sized tubers of his sorts—viz., those we may consider as being scarcely arrived at perfect ripeness, which I find always answer best for seed, and let them lay exposed on dry ground—in the shade preferably, for two or three days, to become slightly greened, and then to be stowed away from that time till the day on which they are to be planted upon wooden slabs formed into platforms, or old doors having laths nailed round their edges to secure the tubers from rolling off, as they are placed upon them in single layers. The slabs or doors should be adjusted in a dry cellar, garret, or outhouse secure from frosts, in a twilight, and a temperature ranging from 40° to 50°, and during very severe frosts they should be covered over with matting or straw, or something of the sort handy. About three weeks before planting time every eye, excepting the most prominent one on

each tuber, should be scooped out to the very quick with a pen-knife. Then, when the set is placed in the soil, the seed will have already healthy young shoots attached to them, almost as sturdy as one's little finger, incapable of becoming detached from the sets, unless by the roughest treatment. From this single sprout three or four sturdy stems will branch out and bear a fine and an even abundant crop, with a flourishing though not a profuse foliage, which will amply compensate for the extra care and trouble, and the plan has also the advantage of expediting the maturity of the crop some three weeks sooner than the usual "happy-go-lucky" enervated sets, tumbled about anywhere and in any way, probably from the time they are taken up till they are tumbled into the soil again with scarcely a tithe of their natural stamina, on account of the "spurtings" they have undergone. Appropriately to the present question, it may be repeated that when a first shoot is rubbed off from a Potato, a plurality of inferior eyes are almost sure to spring up in its place; hence inferior, weakly foliage.

Besides, the seed tubers prepared as above may be planted later by a fortnight or three weeks, and by so much we avoid the coldness or wetness of backward soils or seasons, and avoid altogether the disposition to "club" or "Bobbin-Jones" of the times previous to the appearance of the disease. I can safely say I lost more Potatoes before 1847 by the former than I have ever experienced since by the latter; so I cannot do otherwise than attribute my success to the practice I recommend, for a worse soil as regards the Potato disease than that which I have had to deal with for the last twenty-three years, I suppose it would be impossible to find.

I have 109 sorts this season growing in this garden, 102 of which are of my last batch of seedlings, besides twenty-seven old friends, which I could not find heart to shake off, growing in various allotments in the fields. I have also my grafted Potatoes of last year, growing side by side with their originals, in order that I may study their features of growth and tubers, and learn what is to be the result. This year I have "gone in" for colour, by grafting the Red Ashleaf on Dickson's Premier, a white Kidney, and Paterson's Scotch Blue on Royal Albert, which for symmetry as a round white is unequalled, but deficient in flavour. At the end of two years I think some decided judgment may be formed on this interesting subject. I could perceive a decided difference in the colour of the shoots of my seedling Onwards, which I grafted last year on Almond's Yorkshire Hero, and they maintain up to the present time a marked difference of foliage by the side of the true sets. In the other sorts I can also perceive a difference of foliage, though not so decided as in the Onwards grafted.

As regards the latter seedling, you may probably remember it is the only one I thought worthy of being kept out of a batch of 105, after seven years' proving. The cross was between Jackson's Seedling Kidney and the old Fluke. Mr. Rivers informed me this spring that it does very well with him at Sawbridgeworth. "It is as early as the Early Betty, but a better Potato." It will do well for small gardens in good soil, and nowhere else, except to be grown for seed. In rich ground, and for summer digging, where most of our popular varieties would be inclined to expend their energies in haulm, the Onwards will do well, and the farther north the better. It is a somewhat flat round sort, white-fleshed, of first-rate flavour, crops well up to the stem like bunches of Grapes; a true parlour Potato of medium size. I have lately cooked a dish of it two years old, plump in tubers; and for flavour and appearance in its old age, it may be likened in its flesh to roasted Spanish Chestnuts.

I am happy also to inform you that not a single set out of all my crop has failed to come up well and strongly this season; and the manner in which they resisted the hurricane of last week, was a sight for me to be proud of.

I have some very promising sorts amongst my set of new seedlings; and let me advise those who may in future endeavour to raise new varieties, never to cross a round sort with a Kidney; it is the rock I split upon for years. Cross rounds with rounds, and Kidneys with Kidneys, and the result, "mongrels," may not have to be written. The Rev. W. F. R. delyffe has given the text:—"Early ripeners, good keepers, with every other good attribute belonging to the Potato.—UPWARDS AND ONWARDS."

NEW FUMIGATOR.—We have received one of Jones' Botanical Fumigators, which is a simple and apparently useful apparatus for fumigating houses and pits with tobacco smoke. It is

handy and portable, and may be worked by blowing with the mouth where the house is small and the amount of combustion required is not great; but when large houses are to be attacked, it is fitted to a bellows. In this latter respect it does not differ from the ordinary bellows fumigator that has been long in use. It may be used from the outside of the house by introducing the nozzle through an aperture opening to the inside, thereby protecting the operator against the effect of the fumes of the tobacco.

PEACH TREES AND THEIR FRUITS ULCERATED.

I HAVE this day sent for you to examine a few shoots from some of the Peach trees here, which are grown in a lean-to house facing south; also, a few fruits from the same trees which looked perfectly healthy until about seven weeks since, when some very small spots appeared on some of the young leaves as they unfolded, and shortly afterwards the leaves began to drop off, and the sap to burst forth from the young shoots and some of the fruits. At first the evil affected parts of the trees, but in some cases it has affected the whole tree. It appeared first on those that were planted two years and a half ago; they were then rather large trees turned out from 18-inch pots, and planted in the front border, in good Peach soil, with a little fresh added, but no manure. It then appeared at the other end of the house, on a fan-shaped tree standing across the border, which had the ends of its roots lifted when the others were planted, and since that there has been a slight appearance on three trees against the back wall. We had a good crop of fruit last year, and a fair crop this year. I have taken off nearly all the fruit, whether diseased or not, from the trees so badly affected; I have also thought of lifting the trees in the autumn. What would you advise me to do, also to what do you attribute the disease? The trees have not been watered with liquid manure this season, but a little was given last season when the fruit was growing. The house has been shut up by night and opened by day, according to the weather.—A CONSTANT READER, *Torquay*.

[We have experienced somewhat similar results, but we attributed them to want of water last summer, and then to prevent our losing the crop we used water far too strong, which set the wood growing afresh, and prevented its being thoroughly ripened; but our wood this year seems in very good condition. We could not help ourselves, for we had no means to weaken the liquid, but were forced to use very strong or none. We do not see from your statement that your trees are suffering, or only slightly from such a cause. We have little faith in merely lifting the trees, as they have been so recently transplanted, if the roots are healthy. We direct your particular attention to the last expression, as you may have, and very likely have, mildew at the roots; in this case pure fresh loam, and a sprinkling of sulphur over the surface, will be the best remedy. The sulphur will do no harm now.]

PROPAGATING FROM BARREN STRAWBERRY PLANTS.

I CAN find no information either in your Journal or in any gardening treatise that I can refer to relative to barren Strawberries. Out of about two thousand plants one and two years old, all very strong and healthy, I have 280 barren ones—*i.e.*, without blossom. Many of the old plants (now two years old), from which the runners were taken were barren, and are again so this year. All my plants of Black Prince are crowded with blossom, not one barren; and of 250 plants of Eleanor there are only eight barren.

Perhaps you can inform me if runners from barren Strawberries will be barren also. If so, it would be desirable to root up every one in a plantation.—RICHARD TAYLOR.

P.S.—“Lawn mowings,” recommended in your last Journal, are very undesirable, as I find the various grasses ripen their seeds, notwithstanding being cut, and give a world of trouble afterwards by their progeny. Spent hops, also recommended by you, are the best to apply.

[The imprudence of propagating from barren Strawberry plants has often been alluded to. Hence the importance of rooting all out, especially if they have the particular features referred to in “Doings of the Last Week,” page 414, which see and compare with what you notice in your own plantations.]

The wisdom of discarding the barren plants with the features described at the page indicated, is to be found in the simple fact that these barren plants produce the earliest and strongest runners, which, therefore, are more likely to be chosen than those of fertile plants. Had we time to be particular and take runners early, we would even in the case of fertile plants pass over the first plant on the runner, and select the second on the string. When we gave attention to this matter for years, we uniformly found that the first runner made the best plant, and the second runner the most prolific one. We like spent hops when they are to be obtained.]

LADY DOWNE'S GRAPES OF 1868.

I SEND you a few berries of Lady Downe's Grape, my object in doing so is to show you the exceedingly good-keeping qualities of that variety. The Grapes I send you were ripe in August, 1868; they were cut from the Vine in February last, and the end of the branch inserted in bottles of water. I sharpened the branches of some of them, and ran the end into Mangold Wurtzel, but the stalks of the berries shrivelled in three or four weeks. Those which were inserted in bottles of water kept green and fresh, and have a good flavour at the present time. The house is planted with Black Hamburgh, Trentham Black, and Lady Downe's. The Trentham Black Grapes were all cut the first week in January, and they kept well up to that date.—JAMES DOUGLAS.

[The berries of Lady Downe's sent by Mr. Douglas, were marvels of skilful management. They were shrivelled a little as might be expected, but not to such an extent as to have lost their plumpness; and the flavour was good, not quite so sugary as we find in slightly shrivelled Lady Downe's in February and March, but quite fit for the dessert; neither were they equal in flavour to the new Grapes, of which there is now abundance in the markets.—EDS.]

PEWITS AS SLUG AND CATERPILLAR DESTROYERS.

I THINK the value of the green plover (Pewit) is not sufficiently appreciated in walled gardens. I have now had some two years, and I would not be without them if I had to give a sovereign each for them. In a neighbouring garden the ground is white with lime, and the Gooseberry trees powdered with bellebore, and yet the gardener tells me he can hardly keep the slugs and caterpillar down; another neighbour has had boys picking his Gooseberry trees for some days; whilst my gardener says we have not a slug and hardly a caterpillar. I gave a few shillings for half a dozen advertised in your columns, and I intend to renew them as the old ones drop off, as I am quite sure the gardener will never be without them again with his own consent; indeed, I am certain he would rather buy them himself than want them. My birds, owing to the open winter, have never become very tame, but I believe in a hard winter they will come to be fed at a whistle.—I. N. P., *York*.

VARIATIONS IN TAXODIUM AND PINUS.

IN some remarks before the Academy [of Natural Sciences, Philadelphia,] on July 14th, in reference to adnation in the leaves of Conifera, I said that the power to branch was the test of vigour; and with increased vigour came proportionately the power of adnation. I pointed out that this was the universal law through all Conifera, so far as I have been able to examine them; and that it fully accounted for the specific identity of many forms supposed to be distinct. I went so far as to suggest that *Taxodium distichum*, Richard, and *Glyptostrobus sinensis*, Endl., were no doubt the same thing, because the only difference between the growing plants was in the different degrees of adnation in their foliage; and because with this adnation was the increased power to branch observed in all other cases. The two points, going together, seemed to indicate that this could not be a solitary exception to so clearly marked a law. I exhibited specimens taken from *Taxodium*, and from *Glyptostrobus*, showing the approach of the two in the manner the theory indicated.

Since then some new facts have come before me confirming this view in a remarkable manner. On the nursery grounds of Mr. Robert Buist, of the Darby Road, near Philadelphia, are a few trees which I suppose to be the *Glyptostrobus*, but which

Mr. Buist assured me were many years ago selected by him from a bed of some thousand *Taxodiums* on account of their peculiar appearance. I exhibit specimens from eleven different trees. It will be seen the suppression of the leaf blades or adnation is in exact proportion to vigour, or the power of forming branchlets, and with this increased vigour the *Taxodium* becomes *Glyptostrobus*, so far as any comparison of leaves and branches can identify anything.

At the conclusion of my paper on the laws of adnation, read before the meeting of the American Association for the Advancement of Science, at Chicago, Dr. J. S. Newberry kindly pointed out that, in a fossil state, *Glyptostrobus* and *Taxodium* were often found side by side, but always with so much difference between the scales of the cones that, while assenting to the general principles of the paper, he could not regard these two plants as identical. As cones are nothing more than metamorphosed stems and branches, it is not surprising that the same laws of adnation which might operate in making the *Taxodium* *Glyptostrobus*, and which make them look so very distinct in the different stages of adnation, should also operate on the fruit, and make it appear, when at the widest point of divergence, as really different. It should in fact do so, and instead of the difference in the cones of these fossils being any proof of their specific distinctness, it must be received as a natural sequence of the law I would evolve.

The specimens I now exhibit show at any rate that the two plants are identically the same. This granted, it completely refutes the generally received theory, that no one species of *Conifera* inhabits at once the eastern and western worlds.

In my paper on variation in *Epigaea repens*, presented for publication last May, I endeavoured to show that "cultivation" and "external circumstances" would not account for variations in form to the extent they usually received credit for; but that there was rather a regular principle of growth in form, as well as in substance, independent of outward agencies, which agencies were calculated quite as much to preserve as to originate the growing forms.

Those accustomed to study chiefly from herbaria, and little from living specimens, have no idea of the great variations from one type which many species present. These comparative differences are often so insensibly blended, that it is only when we meet with some very extreme forms that they attract our attention, and then only to note their extreme differences. Even when noted they are contented as obstructing classification, rather than welcomed as invaluable aids in resolving the laws of form.

In a recent review of part 16 of DeCandolle's *Prodromus*, which has lately appeared, with the *Conifera* by Prof. Parlatore, the reviewer says:—"It must be clear to every one that a great number of so-called species are varieties of one strain, doubtless produced by localisation in different climatal or natural conditions." (*Gardeners' Chronicle*, page 922, 1868). As this review is understood to be by one who is himself known as a describer of many *Conifera*, which are doubtless varieties of one strain, it may be worth while to point out, in some *Conifera*, that neither climatal nor any external condition has as much to do with variation in form as an innate power of development, independent of either climatal or local causes.

In one of our commonest Pines—*Pinus inops*—a very careful comparative examination will show scarcely any two trees to be exactly alike; the habits of the tree, the shade of colour, or the length of the leaves, the size or form of the cone, the scales, or seeds—in some one point a difference may be found which cannot easily be described in words. When extremes are brought together the differences are quite as great as characterise different species. By descriptions alone they would be fairly entitled to rank as distinct. The mind fails to unite them. It is only the educated eye which perceives their identity. I exhibit two cones from two trees growing on the banks of the Susquehanna, near Harrisburg. One is very long and narrow—3½ inches in length, by only three-fourths of an inch wide at the base, and the scarcely projecting scales barely spinescent, the other nearly as wide, but only half the length, and with strongly projecting scales and spines. Unless with previous acquaintance of *Pinus inops* in its natural places of growth, a botanist might well be pardoned for considering these distinct species, yet with the multitude of intermediate forms, all under the same external conditions, how can any "localisations" account for the varieties? I have the same experience with *Pinus rigida* and *P. pungens*; and it is doubtless true of other species.

I have noted some interesting variations in *Pinus Banksiana*, which in some way do seem to be connected with location, although I have no doubt that ages of geographical travel from a central point conjoined with the principle of inheritance, might find the natural inherent laws of variation sufficient to account for them. Dr. Gray says, in the last edition of his "Manual of Botany," it is a shrub or low tree 5 to 20 feet high, giving N. Maine, N. Michigan, and Wisconsin, and northward as the localities. I did not collect in northern Illinois, but friends tell me it grows some thirty miles from Chicago, only as a bush. Michaux observes that in Labrador it shows signs of decrepit old age at 3 feet, and in no part of America did he find it over 10 feet. Dr. Richardson, in Franklin's narrative of a journey to the shores of the Polar Seas in 1819—1822, describes it as 40 feet high in favourable situations, but the diameter of its trunk was greater in proportion to its height than in any other Pines of the country. Douglas found it to have longer leaves on the Rocky Mountains than elsewhere. In company with Mr. W. Cranby, I had the opportunity of examining large forests of them growing on the neck of land between Escanaba, on Lake Michigan, and Marquette, on Lake Superior, where we found them just the reverse of Dr. Richardson's experience. Here they were more slender in proportion to their height, not only than any Pine of the country, but probably than any Pine elsewhere. Most of the trees were from 30 to 40 feet high, remarkably straight, but only from 6 to 12 inches in diameter. We roughly measured one at Escanaba which was about 20 inches in diameter, and perhaps 60 feet high, little shorter than in fact a very fine *Pinus resinosa*, about 2½ feet through, growing near it.

Now these variations have relation to only one particular, that of size; there would no doubt be found others in many respects; but even in this one character no theory of climate or soil will account for them. If a low temperature dwarfs the Labrador specimens, what is to account for the small bushes in Illinois or southern Wisconsin, in lat. 42°? And again, why are these latter in the rich soil of this district so small in comparison with the almost timber trees of a few hundred miles farther north, and in what is usually considered the poorest land of the north-west? Soil and climate may have some influence in aiding variation, but facts show the origin is deeper than these—namely, a native power to change, kept in check only by inheritance and perhaps external circumstances.

I have heretofore reported *Pinus pungens* as growing at Port Clinton; I find it now abundantly on the hills about Harrisburg; so it may be set down as native to the whole interior of the State of Pennsylvania.—THOMAS MEEHAN (*American Gardener's Monthly*).

CUCUMBER CULTURE.—No. 5.

CULTIVATION IN PITS.—Cucumbers are grown in pits heated by dung or other fermenting materials; sometimes provision is made for lining the bed, sometimes there is none. In the latter case the pit will only be suitable for Cucumber growing after March, for if the plants were turned out into the bed earlier the heat would soon be reduced below the proper degree by fermentation abating; and even if the fermenting material were as lasting as tan, the requisite top heat, in consequence of the earthing of the bed, and the cold early in spring, could not be maintained. Such pits, therefore, are of little value except for summer. Pits without spaces for linings answer well in summer, but the cultivation of Cucumbers in these ought not to be attempted before April; indeed, pits are so much in request for protecting and hardening-off half-hardy plants for the flower garden, that they can be ill spared until May be far advanced. This is a good time for filling them with hot dung in quantity sufficient to raise a bottom heat of 80°, and for giving the plants a start. If not occupied with plants the pit may be filled with fermenting materials at the end of March, or beginning of April. These pits should be partly sunk below ground, the front being 4 feet high—namely, 2 feet below the surface level, and 2 feet above it, and the height at back 6 feet. The width need not exceed 6 feet. In filling them the dung must be well beaten, trodden firmly, and brought level with the tops of the rafters or wall plates, as it will, if this be neglected, sink considerably, and the plants would then be too far from the glass.

After the bed is made the lights should be put on, and in a week or so the surface should be levelled, adding more dung if that first put in has sunk much. The bed should be so high when the soil is put on that the latter, when drawn into hillocks, may be no more than clear of the lights. In a few days it will

sink enough to afford sufficient space for the plants. When less than the full depth of the pit is filled with dung, the plants should be brought as near the glass as will allow of their growth, but not near enough to touch it. The treatment as regards soil, earthing the bed, planting, and subsequently, does not differ from that required by plants grown in frames.

In some cases pits heated by fermenting materials are employed for the production of Cucumbers at an early season, in which case the pit should not be less than 4 feet 6 inches high in front, and 6 feet high at back, calculating from the foundation, and at least half that depth should be below the ground level, provided water does not stand in the ground at that depth. If it do, the sunk part will be nearly full of water during heavy rains, and water lodging at all will cause the heat of the bed to decline, while if it rise high, and remain so, the heat will cease altogether.

There are various kinds of pits heated by fermenting materials in use, some having arched cavities across the bed, built pigeon-hole fashion, the distance from the bottom of the pit to the centre of the arch being 3 feet. They are of the same width as each light, and both ends being open the hot dung can be placed under the arch to heat the bed, and replaced by fresh as its heat declines. In addition there is, back and front, a space outside of 2 feet 6 inches in width, which is also available for linings, and by renewing them and the dung under the arches, the proper heat may be maintained with tolerable exactitude. The space inside from the arches to the glass may be filled with hot dung, and when the heat rises the dung will sink and afford room for the soil, which should be placed under the centre of each light in hillocks as described for frames (see pages 455 and 496 of vol. xv., and pages 5 and 63 of vol. xvi.).

Another and more simple form of pit is that in which the walls are built pigeon-hole fashion. They need not be more than 4½ inches thick, and it is desirable to sink them 2½ feet below the surface. For two or three courses from the bottom they should be built solid, then lay the bricks as stretchers, leaving open, however, the space of a brick between every two bricks, and in that way carry the work up 18 inches above the ground-level for the back wall, and 9 inches above it for the front. Above this the wall at back should be carried up solid 2 feet, and 1 foot in front. At the back and front of the pit there must be a cavity for the hot dung used as linings, and it ought not to be less than 2 feet, and there is no necessity for its exceeding 2 feet 6 inches in width, but it should be 3 inches less in width at bottom than at top. The side next the soil should be built of 4-inch brickwork sloping upwards, carried about 9 inches above the ground-line, and either coped with stone, or brick on edge set in cement. In the coping there should be inlets at 3 feet 6 inches apart to receive the ends of spars (2½ by 3 inches) to stretch across the cavity, their other ends resting on a piece of wood or ledge secured to the wall of the pit with bolts. It should be fixed about 1 foot higher than the upper course of pigeon holes. Shutters of wood should be used to throw the wet off the linings, and will, of course, be supported by the spars, both these and the shutters being so contrived that they can be easily removed when the linings require renewing.

These pits require to have the interior filled in the first instance quite up to the top of the rafters with the hot dung, heating and making it firm as the work proceeds, and drawing on the lights. When the heat has risen, level the surface, adding more dung if necessary, and when the bed is of the proper heat soil may be put under the centre of each light. The treatment in other respects is the same as described for frames. To maintain the heat the front cavity should be filled with hot well-fermented dung, and when that fails to afford the proper temperature, or is beginning to decline in heat, follow with the cavity at the back, always keeping the linings, back and front, high enough to cover the pigeon holes; in fact, the dung should be raised about 1 foot higher, and as the dung sinks add fresh, so as to keep the pigeon holes covered. When the heat of the back lining begins to decline, the front lining should be taken out if it be spent, and replaced with fresh hot dung; or by turning it over, moistening it, and adding some fresh hot dung, well mixing the latter with the old, it may when thus renewed give off a good heat. The back lining will need to be renewed or replaced as the heat in the front lining declines. In this way the heat of the bed may be kept up, always securing the proper temperature in the pit by attending to the linings in time, and before the heat becomes too low, as if the temperature fall too low by the time the linings are renewed, it may, before the renewal has an effect, be so reduced as to be in-

jurious to the plants. It is well, therefore, to line but one side of the pit at a time, and to renew the other before the temperature falls too low.—G. ABBEY.

NOTES AND GLEANINGS.

MR. ROBERT BEOBIE, who was gardener at Castle Martyr, in the county of Cork, until the establishment was reduced on the death of the late Earl of Shannon, succeeds Mr. Barnes as gardener at BICTON.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of the present showery weather to plant a good breadth of *Brussels Sprouts*, early *Broccoli*, and *Winter Greens*. If the ground for the above has been properly prepared, a considerable quantity can be put out in a short time. If the plants have been kept thin, the early-sown ones will now be sturdy. Plant with a trowel in a shallow trench or deep drill; though this is a little more troublesome than the ordinary method of planting with the dibble and setting-stick, the additional labour is amply repaid by the more rapid growth of the crops. *Broccoli*, a last sowing of the Walcheren may now be made, also one of the late *Cauliflower*; this crop will continue the supply up to Christmas. *Carrots*, *Onions*, *Parsley*, and most other summer crops, should now be finally thinned. *Endive*, sow for succession. *Lettuce* and other salad plants should, as previously directed, be sown at short intervals on the spot where they are to remain. The time between each sowing may be reduced for the next two or three times, as during the hot weather of July and August these crops, particularly on dry soil, continue but a short time in perfection. *Peas*, a sowing or two should be made of the tall late sorts, such as *Veitch's Perfection*, *No Plus Ultra*, and *Victoria*. *Scarlet Runners*, sow for a main crop, also a good breadth of *Dwarf Kidney Beans*. *Tomatoes* must be regularly attended to, keeping the shoots thin, and stopping them above a cluster of fruit.

FRUIT GARDEN.

Remember the previous directions with regard to the thinning and stopping the young shoots of all trained fruit trees. Young Peach and Apricot trees when making too vigorous leaders should have the points of the branches shortened, to encourage the production of other shoots less vigorous and of a fruitful character; this will dispense with the necessity of shortening them back at the winter pruning. Strawberries will require attention. Layer the runners intended for pot culture early, as well as those required for making new plantations. All spare runners may be cut away, and the plants kept free from weeds. Thin and stop shoots of *Pig trees* as soon as they have made a growth of about 6 inches, and remove all useless laterals from out-door Vines.

FLOWER GARDEN.

The most pressing work just now is keeping the place in order. A little pains taken with the walks at this season will be amply repaid by the appearance of comfort and the pleasure which well-kept walks give to any place. The edgings, whether of grass, Box, or other evergreen, should be repaired or clipped. This may appear to some an unseasonable time for such work; but when it can be done the effect produced fully compensates for the trouble, and in flower gardens effect is everything. This is the best time of all to clip evergreen hedges and edgings, as they have time to make and perfect a new growth, while the season is far enough advanced to prevent their growing very much out of shape. Watch the different annuals as they come into flower, and mark those whose superior habit of growth, size of flower, or brilliancy of colour make their seed desirable; and that these good qualities may be perpetuated in their progeny, destroy inferior ones as soon as they expand their first flowers. Trimming, staking, and pegging-down must be well followed up at this period, when neatness and order are essential. See that strong-enough stakes are applied to plants with heavy foliage. Keep *Roses* as free as possible from insects, and, if time can be spared, dead blooms should be removed. It cannot be too often repeated that to winter stock safely with ordinary care, the cuttings should be planted sufficiently early in the autumn, so as to have them well established and fit to be exposed to the open air by the middle of September. Begin, therefore, in good time, and with such as are found to be the most tedious to propagate. *Hollyhocks* should be frequently examined with the view of taking any cuttings which they may

afford, as those struck early will make strong plants for next season. Attend to the tying-up of these and Dahlias, and go over the masses of Verbenas, &c., frequently, to keep their growth orderly and neat. The propagation of Carnations, Picotees, Cloves, &c., should not be longer delayed. As cuttings of the young grass will succeed at this season, a slight hotbed should be made, on which place a few inches of very sandy soil. Select the weakest grass for cuttings, and place a hand-glass over them. The stronger shoots left will answer for layering. The present is a favourable time for putting in cuttings of all the more showy herbaceous plants, selecting for the purpose the small shoots not furnished with bloom. A north border is a suitable place to strike them in, and a hand-glass will facilitate their rooting quickly. Pansies for autumn blooming may be treated in the same way.

GREENHOUSE AND CONSERVATORY.

By means of a tasteful arrangement, and the introduction of neatly filled hanging baskets, even small conservatories should now present a gay and interesting appearance. This, however, is not all; attention must be paid to plants for autumn and winter display. These while in active growth, as they now should be, require a good supply of water, and insects are more troublesome than in the case of plants at rest. Give *Luculias* plenty of water at the roots, and an occasional supply of clear weak liquid manure to old plants, until they have made sufficient wood to insure a good amount of flowers. Manure water must not, however, be given to young specimens growing vigorously, as that would only cause them to become gross, a condition in which they seldom flower satisfactorily. In order to secure fine heads of bloom from this plant, it should be allowed a few weeks of comparative rest, after about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as possible without injury to the foliage, or the health of their neighbours. *Brugmansia sanguinea* is also a useful plant for winter and early spring flowering when managed so as to be pruned and rested about this time. See that large specimens of *Camellias* are not allowed to become too dry at the roots after they have set their buds, for the latter frequently fall owing to this cause. Young and vigorous plants, however, often require to be watered rather sparingly to prevent their making a second growth. Place in their blooming pots the principal stock of *Chrysanthemums*, using for potting a rather heavy loam, with a portion of well-rotted cow dung. Seedling Chinese *Primroses*, *Cinerarias*, and other plants required to furnish the winter supply of bloom, should now be forwarded, by shifting into 60-sized pots; keep them in a cold frame where slight shade can be given them in hot weather; or, which is better, turn the frame to the north. Look to the stock of plants out of doors in showery weather, to see that none of the stock is suffering from imperfect drainage, and throw screens over delicate plants during heavy rains, especially such as have been recently potted.

STOVE.

As light has now reached its greatest intensity, and solar heat nearly so, fires may be dispensed with in the Orchid houses and stoves, except, perhaps, on the evenings of wet days, when a little fire may be necessary to allow of the admission of air early in the morning. As plants at this season are growing fast, the above conditions must be taken advantage of, to supply air liberally, which, in conjunction with light will help to arrest the rapid growth of those plants whose disposition to flower depends mainly on free exposure to both at the same time. There are but few plants which will not benefit by inducing a sturdy habit, and, consequently, the commencement of well-ripened wood. Pot *Achimenes* and *Gloxinias* for late blooming. Stove plants which have been removed to the conservatory while in bloom, should be replaced in heat as soon as their beauty is over, in order to permit their young wood to ripen before the short days.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

ALMOST a continuation of the doings of previous weeks, as regards succession crops. We planted Peas in good condition, and so far apart as to leave room between them for four or five rows of winter vegetables. We are generally free from envy, but we have occasionally felt something very like it, when we have passed through large gardens, and seen whole quarters unoccupied in spring and early summer, ready for winter vegetables, whilst we ourselves could scarcely find a yard of unoccupied ground at home, but were forced to grow the lowliest

things in all sorts of positions and conditions. We are no advocates, in these days of progress, for very large walled-in gardens for supplying vegetables, but, on the other hand, it is one of the great errors of the time to suppose that an endless succession, and a plentiful supply of vegetables and small fruit, can be obtained for a large establishment from one or two acres of ground. Much produce, it is true, may be obtained from an acre of ground when the coarser crops, as Potatoes, Turnips, and even the later Cabbages, are grown elsewhere, but the ground can carry no more than its dense covering; and though, thanks to a little courteous but plain speaking, we have little to complain about, when fine quarters of Onions, &c., are exhausted, we know it to be a fact that many gardeners suffer much when from a limited space they cannot obtain the supply that is wanted. It is often surprising to us that gentlemen who will be satisfied with a very moderate return from an acre of field land, worth, perhaps, no more than from 25s. to 30s. an acre, will not be satisfied with twenty times the returns from the same piece of ground, merely because it happens to be walled or fenced round. With the matter thoroughly ventilated and understood, there need be no unpleasantness about it. Of all parts connected with gardening, the kitchen garden is that alone for which substantial value can be returned. Flower gardens, plant houses, &c., must merely be looked upon as fine paintings and statuary—something to gratify the eye; costing little at first, but costing much every year to keep in order so as to be pleasing. What often surprises us is, that a lady and gentleman, who like a well-furnished table, will grudge an extra rood of ground to the gardener to secure a good supply of esculents or vegetables, and yet will think nothing of adding an acre or two to the pleasure ground or flower garden, though every yard so added will be a drain on their resources every week, and after all yield no return except a gratification to the eye.

Except where everything has to be grown at home, the rapidity of transmission by rail furnishes the best reason against having very large kitchen gardens, provided the owners choose to go into the market for such early produce. We know cases in which gardeners considerably north of London could not send Peas and Potatoes in sufficient quantities to the families in London. Why, they could only have effected such results by growing the earliest kinds, not in the open air but under glass; and although fine products are thus obtained, as mealy young ripe Potatoes instead of waxy watery ones, the produce must be comparatively limited. Thanks to the steamers and rail, it is no uncommon thing to find the markets north of London supplied with Peas and Potatoes from the south of France, the Channel Islands, at times from Algiers, and very frequently from Cornwall and Devonshire, when no such produce could be obtained from the open air in the garden at home. These are matters of great gratification, as bringing the earliest productions within the reach of the working classes. But beneficial as they are, they are often a source of unpleasantness to the gardener. Servants like changes as well as their masters, and when Peas and Potatoes are seen in the markets of the counties north of London, brought to sell because they are early, out comes a demand for new Potatoes for the servants' hall, when the gardener has none fit for use except the early ones he has prepared under glass for his employers. The best mode of avoiding all unpleasantness in such matters is to purchase these early products, or have it understood that there must be a waiting before the products come in naturally in the climate of the place. There is generally a law of compensation in these cases, as where crops come in fit for the table very early they do not continue late in such good condition as where they come in later at first. What we wish clearly to state is the simple fact, that much north of London—in Hertfordshire, Bedfordshire, or to Yorkshire—it is impossible to compete as respects early crops with Devonshire and Cornwall. The rail gives the southern counties the opportunity of spreading their early produce, and when this is desired either above or below stairs, it should be purchased at once, without any left-handed reflection on the gardener because he cannot bring in such produce equally early. A clever plodding man will do much to regulate climatic relations; it is beyond his power to control and conquer them. We recollect years ago feeling annoyed almost to explosion point, on seeing an old general, who had a sort of craze for young Garden Beans and bacon, as he went every day counting and examining the state of the Bean beds, and querulously inquiring when they would be ready, as he had partaken of them, and so fine, in Cornwall more than a week previously.

The rains have greatly assisted all crops, and made them in-

dependent of the waterpail. The rats still continuing to purloin our fresh-sown Peas, much against our will we were obliged to try to stop them, and, as previously detailed, wire netting was placed semi-circular fashion over the rows, and prepared pellets were carefully dropped in the centre, so as not to be reached by fowls through the netting. The pellets were simply barleymeal and arsenic, mixed by a piece of wood, with as much water as was sufficient for a tough paste, and then, without being touched by the hand, dropped in the places indicated. Next morning showed that the pellets were broken and scattered, and since then the Peas have been untouched.

Celery.—The weather has been very suitable for planting-out. We are not so forward as usual, and some lights used for bedding plants have been appropriated to Celery, merely to give it some encouragement for a fortnight or so. We have never any trouble with early Celery, scarcely ever have a bolted head. Last season we saw not one from August to the end of March. The true plan for attaining such a result, is to remember that Celery is a biennial, that it is a marsh or ditch plant, and, therefore, requires two conditions to grow to a large size before showing the flower stem—namely, moisture and partial shade, especially in the summer and early autumn months. Staked Peas, between the beds or trenches, yield this shade in perfection.

FRUIT DEPARTMENT.

The *Strawberry plants* that were pricked-out last autumn, lifted as lately detailed, and planted with balls in a pit whence Neapolitan Violets had been taken, and which was covered with glass, have yielded valuable returns of fine fruit. We recently stated that for a definite purpose we had lately thinned but little fruit on forced plants, yet we mean to return to the good old custom. For the last few weeks we have done so, and marked the result, and the weight added to the fruit left seems large above proportion to what would have been the weight of the smaller fruit if left. Of course on a common plant, say a good-sized Keens' Seedling in a pot, a great many of the blooms will set. Years ago, when we had six or more fruit well set, we used to cut away the remainder, and we mean to return to the practice if there should not be so many small ones for a definite purpose, as middle-sized or large fruit will just do as well for creams, &c., as smaller ones.

Watered Peaches, Figs, &c., under cover, gave more air and light to Grapes ripe and ripening, and thinned the later crops, from which there are plenty to remove, and which are now of little use, as, though early in the season they might be looked at for tarts, they are quite tabooed now, as nothing will make them sweet enough; so it is said. When Grapes are cut off no larger than small shot, they cook well; but when above the size of Peas at this season, we question if sugar would easily qualify their acidity.

ORNAMENTAL DEPARTMENT.

Here the flower garden has received a large share of our attention, and since the rains and the prevalence of soft food, the birds have let us alone. With humid weather for a short time longer the plants will be almost as thick as to be beyond their reach. It was rather annoying to find that Verbenas and Pelargoniums were almost torn out of the ground, whilst the earth was thrown on walks and lawns. The Pelargoniums which we had planted out in pieces of turf, did not suffer from the bird-scratching at all. The birds reached the turf and rarely went farther, and did no material injury, as the roots issued chiefly from the sides and the under part of the turf. We find nothing deters the birds long; but before the rains came we kept them off with flags of whitish paper, bunches of feathers, pieces of tin, &c. We have found fragments of old looking-glass very good, but nothing serves as a deterrent long. Other animals are just the same in this way; strings and feathers will keep deer off for a time, but at last they become used to them, as we know to our sorrow. A fine lot of Roses have been regularly grazed. It requires a very lofty fence to keep them out, if they once resolve to enter. Bucks are the worst, and the worst time is when they have cast their antlers, as then they like privacy and retirement for awhile. During that period they will go anywhere for seclusion, even though the place intruded on should yield inferior food to that which they have left.

The weather has given us no trouble with watering as yet, and we have surface-moved the ground, and will continue the practice. We fear that even with thick planting we have scarcely enough left for contingencies, as it is bad policy in any case either to plant or send away the last plant. We have examined and find the roots of most plants progressing freely,

and for free growth and bloom we need only fine bright weather. Roses have needed but little looking after in the way of insects, and the blooms have been fine where unmeddled with by the interloping deer. We have had a few cold mornings during the week, and the yellow Prince of Orange Calceolaria, the Iresine, and a few other plants suffered a little. We shall defer planting the bulk of the Perilla for a few days, and most likely will let Coleus stay for a fortnight. In exposed places planting these out too soon often spoils their rich colour for the season, unless the bed is protected after planting, and such protection is generally an eyesore when other beds are coming to perfection. We think it better in particular cases to fill the beds temporarily with hardy plants, and remove them when the Coleus are to be turned out. Singular things sometimes happen. In the case of Iresines treated exactly alike, some in a sheltered place have suffered considerably, though they will soon recover, whilst others in a higher, more exposed position have suffered not the least even as respects the colouring.

No time should be lost in putting in cuttings of all plants that it is necessary to increase. Pinks the sooner they are in, the sooner will they be struck. Favourite Heartsease will strike now in a shady place without, but better with, hand-lights, and like Violets, may now be easily increased by dividing the old stools into as many pieces as roots can be found for each. Daisies may now also be moved and divided for a fine early show next spring, and, like Heartsease, their beauty greatly depends on their frequent removal and planting. Even these and common Wallflowers are useful under glass early in spring.

Cleared-off flower stems from Chinese Primroses, and set them in a shady airy place previous to repotting them; pricked-off those first sown, and sowed for succession. We saw somewhere the other day, that any mechanic would find enough of seeds in a shilling packet to supply himself and all his neighbours with plants. The neighbours must be few, or the packet must be a wonder, very different from what comes in our way. Even a 2s. 6d. or 5s. packet contains seeds very easily counted. Let us advise our mechanic readers to try and save a few seeds from their own plants, and let us add that they will rarely do this in the case of good sorts without artificially fertilising the blooms that are to produce seed.

Potted lots of small plants of Pelargoniums, Scarlet and otherwise, for winter and spring use, what are too small for bedding coming in well for this purpose. See what was said of Balsams, Achimenes, and Cockscobs last week, not forgetting Browallias, which make an agreeable change in the autumn months. Roses in pots we shall clean and pot ere long for early work, and prevent them blooming more at present. Cinerarias are casting their seed where they stand, and the best will presently be turned out to throw up fresh sucker plants.—R. F.

COVENT GARDEN MARKET.—JUNE 23.

THERE has been more languor in the trade this week than we have experienced for some time, and stocks have rapidly accumulated; prices consequently recede, and as the out-door Strawberries are now coming in freely, they will prove the staple article in demand. Foreign produce includes Figs, Peaches, Nectarines, and Melons. The Potatoes from the Channel Islands show a considerable amount of disease.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½ sieve	0	0	0 to 0	Melons.....	each	5	0 to 10	0
Apricots.....	doz.	2	0	3	0	Nectarines.....	doz.	10	0
Cherries.....	lb.	0	6	1	0	Oranges.....	100	4	0
Chestnuts.....	bush.	0	0	0	0	Peaches.....	doz.	12	0
Currants.....	½ sieve	0	0	0	0	Pears (dessert).....	doz.	0	0
Black.....	do.	0	0	0	0	Pine Apples.....	lb.	5	0
Figs.....	doz.	6	0	10	0	Raspberries.....	lb.	0	0
Gooseberries.....	quart	0	3	0	6	Strawberries.....	lb.	2	0
Grapes, Hothouse.....	lb.	4	0	10	0	Walnuts.....	bush.	10	0
Lemons.....	100	6	0	12	0	do.....	100	1	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	6	0	Leeks.....	bunch	0	4
Asparagus.....	100	3	0	6	0	Lettuce.....	score	1	0
Beans, Kidney.....	hd.	1	0	0	0	Mushrooms.....	pottle	2	0
Beet, Red.....	doz.	3	0	5	0	Must.& Cress, punnet	0	2	0
Broccoli.....	bundle	0	0	0	0	Onions.....	doz. bunches	8	0
Brus. Sprouts.....	½ sieve	0	0	0	0	Parsley.....	sieve	3	0
Cabbage.....	doz.	1	0	2	0	Parsnips.....	doz.	0	1
Capiscums.....	100	0	0	0	0	Peas.....	quart	1	0
Carrots.....	bunch	0	8	1	0	Potatoes.....	bushel	4	6
Cauliflower.....	doz.	4	0	3	0	Kidney.....	ditto	4	0
Celery.....	bundle	1	6	2	0	Radishes doz. bunches	1	0	0
Cenmers.....	each	0	6	1	6	Rhubarb.....	bundle	0	0
Endive.....	doz.	2	0	0	0	Shallots.....	lb.	0	1
Fennel.....	bunch	0	3	0	0	Spinach.....	bushel	2	0
Garlic.....	lb.	0	8	0	0	Tomatoes.....	doz.	3	0
Herbs.....	bunch	0	3	0	0	Turnips.....	bunch	0	1
Horseradish.....	bundle	3	0	5	0	Veget. Marrows.....	doz.	0	0

TO CORRESPONDENTS.

BOOKS (An Amateur).—"Johnson's Science and Practice of Gardening" can be had at our office, price 3s.

WILD FLOWERS (Miss Stalton).—The last number is 93. The work will be continued until all our native flowering plants have been portrayed and described.

DISTINGUISHING ROSES BY THEIR LEAVES (H. D., Staplehurst).—"The Cloth of Gold, Davonshire, and other Roses can be grown on their own roots. Some sorts, however, succeed better on alien stocks. Much depends on the nature of the soil. You may best detect the Dog Briar shoot, also that of the Sweet Briar, by the comparatively small leaves. If a Rose is on a Briar, and the shoot is below the point of union, that shoot, of course, is one of the Briar and not of the Rose. The same may be said of the Manetti, Cécile, Bourcault, or any other stock. The leaves of the Sweet Briar are scented, and smaller even than the leaves of the Briar; moreover, the stem is more thickly set with thorns. The thorns of the Briar turn downwards. I have not observed them turn upwards and downwards. When you see a shoot with much smaller leaves than the tree generally has, you may suspect its being a shoot from the stock. This applies both to the Briar and Manetti. The usual complement of leaves—not counting two little stipules at the base of the shoot—is seven.—W. F. RADCLYFFE."

ROSES CHARLES LER and MADAME JACQUIER (Doroniensis).—"I have not the two Roses named; but I will guarantee you will be more than pleased with these—Alfred Colomb, Marie Baumann, and Madame La Baronne de Rothschild. They are Roses I will recommend to the whole habitable globe. The Baroness is out now, and the blooms I have already had were too beautiful to describe. They were 4½ inches in diameter. I was astonished at 'Q. Q.'s' description of Charles Lefebvre. I have 167 plants now in full bloom. I never knew it fail to open in any season. I think he must have General Washington in its place.—W. F. RADCLYFFE."

CABBAGES (R. N.).—We do not discern any trace of the Brussels Sprouts in them, nor do we understand what benefit is probable from such a cross. The flowers you enclosed are correctly named.

ALOE (H. Post).—As we neither know the species nor the condition of the plant it is impossible for us to state its value. You had better consult some London nurseryman.

GRAPES (Bittenfeld).—Mrs. Pince's Muscat Grape should be classed among Muscats.

BUNCHES OF GRAPES DECAYED (A Young Subscriber).—Such defect in the setting of the Grape blooms takes place from different causes, as an excess of bunches, too damp an atmosphere, and too much damp in the border. As you have given air so freely, have plenty of heating power, and the bunches on the Vines from the middle to the top of the house are not all affected, we should judge that the appearances in your case are attributable to too much moisture in the border, or overcropping.

IRISH YEW VARIEGATED (J. A. S. J.).—The white-variegated Irish Yew is not new. It is not so permanently variegated as the golden one, and is apt to "run." If yours is a seedling and not a sport from the golden, it is probably a new form and may be distinct from the existing variety.

CUCUMBER LEAVES WITHERING (An Amateur).—There must be some great defect to occasion the flaying and withering of the leaves when exposed to sun. It may be caused by an insufficient supply of water at the roots, or the soil may be very thin, the roots having nothing to work in but a close, spongy mass of dung. The root action in either case will not be vigorous, hence when the leaves are caused to exhale powerfully by the rays of the sun, the roots do not afford sap in sufficient quantity, and the leaves wither and die. It will be lessened or prevented by shading. If there is nothing wrong with the roots, the plant's leaves may not withstand sun on account of their having been regularly shaded, and not having had a sufficiency of air. The shading should be withdrawn gradually, and air admitted a little at a time. The Cucumbers will not grow, nor be worth anything, unless you have good leaves; and if these will not bear sun, your hope of fruit is extremely small. It may be that your plants are diseased. The plants' going off in a short time without any apparent cause, is at present a mystery.

ROSES (Adam).—It is not possible to tell how long it will take for a Rose bud to bloom from the first appearance of the bud, so much is dependant on the weather; but it usually takes a month. We do not know of any process by which you could force into bloom in a bed in the open air, unless you were to cover them with glass. We have seen plants watered with water at a temperature of 97°, giving good soakings every alternate evening, and that was said to bring them into flower some days sooner than those not so treated.

PELAGONIUM LEAVES SPOTTED (A Lover of Plants).—The leaves are spotted, a result of the sun's rays falling powerfully upon them whilst wet. It may not necessarily be from syringing the plants, but from their being shut up closely at night. Moisture will condense upon them, and from a continuance of moisture on the leaves they will spot even without exposure to the sun's rays. The foliage should be kept dry by an abundance of air during the day, and at this season during the night also. The soil may not be suitable; indeed, we should not select such as you describe. But why keep them in a warm house at 60° at night? Place them in a cold house, or in a pit or frame, giving an abundance of air. They will not do well in a vinery at this season. The books about which you inquire may be had through any bookseller, who would inform you of their prices.

APPLE-TREE LEAVES BLIGHTED (S. S.).—The Apple-tree leaves are much blighted or mildewed. The best remedy that we know is syringing the trees with lime water; 12lbs. of fresh unsalted lime being placed in a tub, pour over it thirty gallons of rain water, stir well up, allow the mixture to stand two days and nights, and then syringe on a calm evening with the clear liquid, or lime water. If you dissolve 1 oz. of common salt in every gallon of water, it would do much to free the trees of the parasites.

TOP-DRESSING VINE BORDER (Idem).—It will not be too soon to top-dress the Vine border early in October, as you wish to have the space for plants. Your proposed treatment is quite right, taking care not to make the border more wet than can be helped by watering the plants in winter. Be sure you do not overtop the Vines, as nothing is so injurious, and especially when the Vines are young.

PLUNGING VIOLETS IN POTS (S. S.).—The plunging of the plants in an open border is quite right, it being shaded from the direct midday sun. We should, however, have preferred plunging them in coal ashes, and shifting them into larger pots as those they are in fill with roots, not allowing them to root through the bottoms of the pots. They may be put into 4½ and then into 6-inch or larger pots, according as they grow, watering well in dry weather, and sprinkling soil over and around occasionally to keep down red spider.

BULLACES MONSTROUS (E. M.).—The Bullace sent us is rendered monstrous by a rupturing of the esp vessels, and the parts in which it is not properly elaborated become unusually large, but the fruit will ultimately fall off. It is caused by a sudden check to the flow of the sap, by a cold period succeeding an unusually hot one, or very hot days and cold nights will produce the same effect. All the organs of fructification have been destroyed, or wanting when the flowers opened.

NIEREMBERGIA (Brunn).—We do not recognise the sprig sent, only that it belongs to a Nierembergia, but which we cannot say, in the absence of a better specimen, the one sent being smashed by the post-office punches. It is probably a half-hardy or greenhouse perennial. The soil most suitable is two parts sandy loam, and one part sandy peat. It is propagated from cuttings in spring when the shoots are sufficiently long, or in summer under a hand-glass, shading from bright sun. The plants should be kept from frost in winter, and rather dry, the soil being poor and sandy to prevent damping off. The Nierembergias are pretty for small beds and edgings, but require hot and dry summers.

PELAGONIUM and GERANIUM (Idem).—There is a great difference between the Storksbill and Cranesbill, they constitute two different genera; but there is no very great difference between what are commonly called the Geraniums used for bedding purposes, and the Pelargoniums used for in-door flowering. Both are Pelargoniums. Pelargonium is characterised by having usually seven stamens, and unequal-sized petals; Geranium, by having ten stamens, and equal-sized petals; and Erodium, by having five fertile anthers usually.

CALCEOLARIA HYBRIDISING (A. F. D.).—The pollen is taken from the largest and best-formed flowers and applied with a camel-hair pencil to the pistils of the others that differ in colour, they having equally good-sized and formed flowers, no seed being saved except from those having very fine well-formed flowers. The plants should be kept under glass, and have a light airy position, picking off the pods of seed as they become ripe, as you will see by the pods opening, and the seed becoming brown. Lay them on clean dry paper on a shelf, and do not allow water to come near them; the pod will open, or in a few days it may be opened and the seed stored away in paper.

GAS-HEATING A SMALL GREENHOUSE (S. E. A. A.).—Before erecting your boiler for gas, you had better notice what is said of gas heating in the number for October 10th, 1887, and the plans there given. For a copper boiler, one with a concave bottom, saddle-back fashion, and holding from one to one and a half gallons of water, will do; and for such a narrow house, 6 feet wide, 9 feet long, and 7½ feet high, 36 feet of 2-inch piping, and 27 of 3-inch, would be sufficient to keep out frost, though a few feet more would be advisable. If you intended anything like forcing the Vases, you would require more heating power, from one-third to one-half more. But for the convenience of the gas we never recommend boiler-heating for small places, it is on the whole so much more expensive. A small brick stove in such a house, fed, if deemed necessary, from the outside, would give the heat required at something like a fifth of the expense. However, we have no doubt that otherwise your proposed plan would answer. In such a narrow house, by having a little more piping, you could have it all against the back wall; but it would answer rather better to have a portion of the piping in the front of the house. You could take a flow and return along the back and the further end, have an additional pipe in front, say two at back and ends, and three at front.

HEATING WITH HOT WATER (J. Anderson).—We thoroughly agree with the nurseryman and gardener you have consulted, and would use hot water for large houses, or where a number could be heated from one boiler. For moderate-sized single houses the flue will be the most economical in every way. For your greenhouse wall, that keeps sealing off as you syringe, we know of but two remedies. Fir it, clean it thoroughly, then damp it all over, and wash with equal parts of quicklime and Portland cement. This dries very hard. The second mode, and the better, is to clean the wall, let it dry well, brush thin y with limewash, and when thoroughly dry follow with anti-corrosion paint.

INSECTS ON BEET AND MANGOLD WURZEL (—).—The grubs which have devoured your leaves of Beet and Mangolds are the larvæ of a carrion beetle, *Silpha opaca*. There is no remedy except hunting for them and hand-picking; but they will be fully fed in a few days and the mischief over, and the roots will throw out fresh leaves, so that it will not be injudicious to pull them up.—W.

FRUIT AT THE MANCHESTER SHOW (Intending Exhibitor).—You will find an answer to your queries in the pages of our present number.

GRAFTING THE PEAR ON A MEDLAR STOCK (A Subscriber, Herts).—We have no doubt that it would succeed, inasmuch as the Medlar can be grafted on a Pear stock.

FRUIT TREES NEGLECTED (Rankinell).—We should confine our operations, so far as the shortening now of the long spurs is concerned, to cutting within a few joints of their base, operating on none but the very long and most straggling, and leaving a few leaves at the base of each. If you do this, those which are shortest and closest to the wall will be encouraged, and you may shorten them all considerably at the winter pruning, which should be done when the leaves have fallen. In shortening them, leave a few joints of last year's wood, cutting away the majority of those shoots that have grown straggling, and most distant from the wall. They may be shortened to within three buds of their base.

LILIUM ACRATUM SEED NOT GERMINATING (J. S. S.).—We apprehend the seed must have been bad. Drain a pot well, fill it to within half an inch of the rim with fine soil, composed of two parts loam, one part leaf mould, and one part of sandy peat, and add either sand about one-sixth of the whole. Scatter the seeds on the surface, after levelling and making it smooth, and cover with a depth of soil equal to the diameter of the seed. Give a gentle watering, and place the pot in a gentle heat (65° or 70°), keeping the atmosphere moist and rather close until the plants appear, and after that place them near the glass, and give them aban-

dances of air. The best time for sowing is February or March, or it may be done when the seed is ripe; but it is not too late now to sow the seed in a hotbed, growing on in a frame and wintering in a greenhouse.

WATER LILY SEED SOWING (J. S. S.).—It ought to be done when the seeds are ripe, casting them into a pond or lake, having a loamy or clayey bottom, where the water is from 18 inches to 24 inches deep. If delayed until spring the seeds may have lost their vitality, but this is not always the case. You should have closed the hole in a flower pot—the deeper it is the better—put in 3 or 4 inches of clay or strong loam, mixed with grit or small pebbles, and dropped the seeds into the water, the pot being filled to the rim with rain or pond water, and always kept full. Constant immersion is needed for seeds and plants of the *Nymphaea alba*, the finest British aquatic. Could you not procure a few plants? They would serve you better than seeds.

FERNS (H. L.).—A *Lycopodium* is not a Fern, and ought to disqualify a collection exhibited for a prize offered for Ferns. A British Fern is not an exotic Fern, so ought not to be exhibited in a collection of exotic Ferns.

SYRINGA ROOTS AND SUCKERS (A. L.).—Your only plan, for this year at least, will be to remove the suckers as they appear, and in autumn, after the leaves have fallen, to remove the bushes from the flower bed. You need not preserve all the roots, but remove the plants with a moderate-sized ball, and cut the heads well in, taking away the suckers with as much as possible of the root from which they proceed.

CLEMATIS EXCELSIOR (T. Cripps & Son).—The nomenclature of colours is quite unsettled. Our reporter, no bad judge, describes it as "greyish blue," but we should say it is bluish purple. One thing, however, we shall agree in—namely, that it is a most beautiful flower, and one of the best of the cross-bred Clematises.

NAMES OF INSECTS (A. Lockyer).—One of the numerous species of scale, *Coccus crataegi*.

FOXGLOVES (Richard Dean).—Your Foxgloves are varied in colour, and beautifully marked.

NAMES OF PLANTS (Amurath).—*Nepeta tenacifolia*. (D. W.).—*Kalmia angustifolia*, or Sheep Laurel.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 22nd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 16	30.248	29.918	61	32	57	57	N.W.	.06	Boisterous with rain; densely overcast; clear and fine.
Thurs. 17	30.209	30.126	56	42	54	55	W.	.20	Densely overcast; showery; overcast, cold wind.
Fri.... 18	29.997	29.921	64	39	56	55	N.W.	.04	Overcast; showery; clear and fine at night.
Sat.... 19	29.955	29.894	62	38	57	55	N.	.01	Very fine; cloudy; overcast and cold.
Sun.... 20	29.990	29.925	62	40	56	55	N.	.00	Cloudy; dense clouds, cold wind; overcast.
Mon.... 21	29.995	29.979	56	47	57	55	N.W.	.12	Densely overcast; rain; densely overcast.
Tues.. 22	30.113	30.086	67	44	56	55	N.	.00	Densely overcast; overcast but fine; densely overcast.
Mean..	30.104	29.978	61.14	40.29	56.14	55.29	...	0.42	

POULTRY, BEE, AND PIGEON CHRONICLE.

HANTS AND BERKS POULTRY SHOW AT READING.

FOLLOWING in the footsteps of the celebrated Bath and West of England Show, this rising Society holds its meetings at the principal towns of the two counties. This year found it most conveniently located in the King's Meadows, Reading. It is not our province to deal with anything but the poultry, but we may remark, *en passant*, that all the branches of the Show were well supported, and denoted progress. Nothing less can be expected from a Secretary as experienced, energetic, and popular as Mr. H. Downes.

We are holders of an ancient, and, we hope, a popular tradition, that the *Dorking* is essentially the farmyard fowl. We believe it to be the best. We were, therefore, glad to see many of the best exhibitors of these birds competing for the prizes offered. The first and second-prize pens were excellent; an unusually good one might be made by taking the cock from the first prize and hen from the second. All the commended were very meritorious. The *Cochins* introduced us to a novelty in the present day, in the shape of Black ones. It is no mean competition when Prebendal Farm, Aylesbury, takes first, and Birmingham second. The *Game* prizes were well contested. The Rev. Mr. Crawws well deserved the prize in each class. In several pens birds that were otherwise very good, drooped their wings. Mrs. Pettat's Golden *Polands* were worthy of her reputation. Mr. T. P. Edwards was a worthy second. Mr. James's *Spanish* are too strong for ordinary exhibitors; but Messrs. Simmons and Lascelles were well up. We are somewhat at a loss to account for the meagre Pencilled *Hamburgh* classes; one very meritorious pen in each, belonging to Mr. Pittis, but no competition. We should advise their amalgamation, and the transfer of the amount saved to some of the other classes. The Spangled *Hamburghs* brought ten pens, and distributed their prizes. The *Brahma Pootras*, both Light and Dark, were very good and well represented. The Light outnumbered the Dark, and the honours both went to Mr. Pares, of Guildford. This is as it should be; that gentleman was the originator of the class. The Dark birds were very good, and Mr. Ellis with difficulty best Colonel Lane. *Game Bantams* were very good, but there is a tendency to breed them with drooping wings. This cannot be too strongly condemned. The "Variety class" of Bantams was strong, and contained birds from all quarters. Mrs. Pettat's Silver Sebrights were very good. The French fowls are making themselves a class. Mr. Harman showed very good birds, deservedly successful. The "Variety class" contained good specimens, but in it there were two very forward *Cochin* chickens. These should have been shown in the *Cochin* class. They are not a "Variety of any description not in the preceding classes." Mr. Fowler and Miss Julia Milward deserved their prizes in *Ducks*.

If we were asked to point out the best of the *Pigeons*, we think we should take Mr. Johnson's *Trumpeters*, and Mr. Ivimy's *Almond Tumblers*; but there were good *Fantails*, especially the Rev. W. Stoke's; good *Magpies*, Mr. Maurice's; Mr. Ivimy's *Black Barbs*, and Mr. Heath's *White Pouters*.

Mr. George Hill's long-eared *Rabbit*, was very good, but in a general competition we should think much of Mr. Fleming's *Hare Rabbit*,

and the general excellence of Mr. George Hill's. It was a pleasant and successful meeting.

DORKING.—1, Lieut-Col. Lane, Bracknell. *hc*, A. Sargent, Andover; J. K. Fowler; E. Shaw, Plas Wilmot, Oswestry; Rev. F. G. Hodson.

COCHIN.—1, J. K. Fowler. 2, J. H. Dawes, Birmingham. *hc*, H. J. Oodfrey, Hammersmith; R. Harman, Cowley, Oxford.

GAME (Black-breasted and other *Reds*).—1, Rev. G. S. Crawws, Cruwys Morchard, Tiverton. 2, W. H. Stagg, Netheravon, Pewsey. *hc*, S. Matthew, Stowmarket; R. Hall, Cambridge. 3, H. Lee, Appledrecombe, Isle of Wight.

GAME (Any other variety).—1, Rev. G. S. Crawws. 2, H. Lee.

POLAND.—1 and *hc*, Mrs. Pettat, Ashe Rectory. 2, T. P. Edwards.

SPANISH.—1 and 2, F. James, Peckham. *hc*, Rev. J. De La Simmonds, Chilcombe Rectory; Rev. E. Lascelles, Newton St. Lee.

HAMBURGH (Gold-pencilled).—1, F. Pittis, jun., Newport, Isle of Wight.

HAMBURGH (Silver-pencilled).—1, F. Pittis, jun.

HAMBURGH (Gold-spangled).—1, S. & R. Ashton, Mottrism. 2, T. Penfold.

HAMBURGH (Silver-spangled).—1, F. Pittis, jun. 2, T. Davis, Reading.

BRAMA POOTRA (Light).—1 and 2, J. Pares, Postford. *hc*, H. Dowsett, Pleshey, Chelmsford. *c*, Rev. N. J. Ridley, Newbury; H. M. Maynard, Holmewood, Ryde, Isle of Wight.

BRAMA POOTRA (Dark).—1, Rev. J. Ellis, Bracknell. 2, Lieut-Col. Lane. *hc*, H. Dowsett; Lieut-Col. Lane.

GAME BANTAMS.—1, Rev. G. Raynor, Borden, Tonbridge. 2, F. James. *hc*, W. Adams, Ipswich; H. Lee.

BANTAMS (Any other variety).—1, Mrs. Pettat. 2, T. Walker, jun., Denton, Manchester. *hc*, E. W. Satten, Reading. Rev. G. S. Crawws; S. and R. Ashton; S. A. Wyllie, East Moulsey.

FRENCH FOWLS (*Crève-Cœur*, La Flèche, or *Hondans*).—1, R. Harman.

2, Col. Stuart Wortley, Grove End Road, London. *hc*, W. Deing, Faversham; H. M. Maynard.

ANY OTHER VARIETY.—1, T. Hollis, Reading. 2, T. Walker, jun. *hc*, J. Pares; J. K. Fowler.

DUCKS.—1, J. K. Fowler. 2, Miss J. Milward, Newton St. Lee.

PIGEONS.

CARRIERS.—1 and 2, H. Yardley, Birmingham. *c*, C. G. Butler, Reading.

TOMBLEDS.—1, J. Ivimy, Lingfield, East Grinstead. 2 and *hc*, H. Yardley.

FANTAILS.—1, Rev. W. Shaw Stoke, Bath. 2, H. Yardley. *hc*, H. W. Johnson, Farnborough; H. Yardley.

TRUMPETERS.—1, H. W. Johnson. 2, H. Yardley. *hc*, A. P. Maurice, Basingstoke; G. Hill, Winchester.

MAQUIES.—1, A. P. Maurice, H. Yardley.

ANY OTHER DISTINCT VARIETY.—1, J. Ivimy. 2, A. Heath, Calne.

hc, W. H. Cooper; G. Hill; H. Yardley. *c*, H. Yardley.

RABBITS.—*Longest Ears.*—1, G. Hill. 3, R. Hall. *hc*, H. Yardley.

Foreign.—1, R. Fleming, Reading. 2, J. Pares. *c*, Master E. De L. Simmonds. *Any Variety.*—1, G. Hill.

JUDGE.—Mr. John Baily, 113, Mount Street, Grosvenor Square, London.

THORNE POULTRY SHOW.

UNCERTAINTY as to the weather was the only drawback to this well-known Show. During the previous evening and the whole night a heavy rain fell, casting a gloom over the mind of every member of the Committee, and these feelings were heightened when the rain increased at the hour most visitors would be setting out for Thorne; and a bitter, cutting wind from the north likewise at this time prevailed. The whole of the arrangements, however, were completed with the same untiring energy that has marked previous meetings, and, fortunately, about 10 A.M. a partial cessation of rain took place, the sun shone at brief intervals, and soon afterwards the grounds, which are remarkably well suited for the purposes of a show, were tolerably well filled. We are informed that, despite the weather, the sum taken for admissions at the gate was £150, about the average of the preceding

years. No doubt, with favourable weather, the improved arrangements of this year's Show would have insured double that sum.

The show of *Spanish* and *Game* fowls was such as can rarely be insured at even the most noted of our shows, every prize in both of these classes being competed for by rival candidates, who are well known as being the most noted breeders. The *French* fowls were well shown; the *Hamburgs*, though few in numbers, were also excellent. In *Polands* the competition was not less excellent, and in the *Game Bantams* the class competition has rarely been equalled. The water-fowls were in themselves a feature quite worthy of our best meetings.

As a kind of unusual tailpiece to a poultry show was introduced a pen containing a Persian cat and her kittens, very pretty creatures, and evidently most charming objects to the lady visitors. Our female friends who visited the Thorne Show were evidently not less puzzled and excited in curiosity by the inmate of the next pen, an immense badger, with a strong leather collar and chain attached, to prevent an instant escape from his temporary prison. The inquiry was frequent, "What can it be?" and one young lady, more venturesome than her companions, dared to interfere so far with this animal's privacy, as to playfully pat it through the bars with her closed parasol. Quick as thought, both silk covering and framework were crushed to atoms; whilst on opening it as best she could, to ascertain the amount of damage, and amidst the impulsive laughter of those around her, she gave vent to the exclamation, "Well, let him be what he will, he's got teeth."

The *Pigeons* and *Rabbits* were numerous and good, and both these portions of the Show seemed popular. The Thorne Committee have from year to year increased the amount of prizes, and we hope their success and the support, even under the present year's adverse circumstances, will encourage them to renewed efforts.

SPANISH.—1, H. Beldon, Bingley. 2, J. Mansell, Loughton. *hc*, E. Brown, Sheffield.

COCHIN-CHINA.—1, C. Brierley, Middleton. 2, W. Harvey, Sheffield.

BRAHMA FOOTRA.—1, E. Leech, Rochdale. 2, G. F. Whitehouse, Birmingham (Dark).

DORKINGS.—1 and 2, F. S. Arkwright, Derby. *hc*, J. White, Warlaby; Rev. G. Hustler, Stillington; J. Stott, Rochdale. *c*, G. Andrews, Tuxford.

GAME.—1 and 2, B. Jarvis, Mansfield.

GAME (Black-breasted and other Reds).—1, C. Brierley. 2, L. Biney, Manchester. *hc*, Sales & Bentley, Crowle. *c*, C. Chaloner, Steetly.

GAME (Duckwings and other Greys and Blues).—1, H. M. Julian, Hull. 2, Master G. Cocking. *c*, E. Aykroyd.

GAME.—1 and Cup, W. Boyes, Beverley. 2 and 3, C. Chaloner. *hc*, H. M. Julian. *c*, W. Gilliver, Pocksworth, near Tarnworth (Black Reds).

GAME COCK.—1 and Cup, W. Gilliver. 2, C. Brierley. 3, C. Chaloner. *hc*, H. M. Julian; W. Boyes; Sales & Bentley; W. Gilliver; C. Chaloner.

HAMBURGS (Silver-spangled).—1 and 2, H. Beldon.

HAMBURGS (Golden-spangled).—1, G. Holmes, Great Driffield. 2, E. T. Whaley, Thorne.

HAMBURGS (Silver-pencilled).—1 and 2, H. Beldon.

HAMBURGS (Golden-pencilled).—1 and 2, H. Beldon. *c*, Burch and Boulter.

HAMBURGS (Black).—1, H. Beldon. 2, E. Baxter, Idée.

ANY VARIETY.—1, H. Beldon (Poland); 2, W. Harvey, Sheffield (Poland); *hc*, J. S. Senior, Dewsbury; W. Harvey, Sheffield (rêve-Cœur). *c*, Mrs. T. Cross, Appleby (French); L. Biney, Manchester (Houdans).

GAME BANTAMS.—1, J. Crossland, jun., Wakefield. 2 and 3, W. F. Entwistle, Leeds. *hc*, J. R. Robinson, Sunderland. *c*, G. Dowie, Netherton (Black Red); J. C. Coulman, Bradholme.

BANTAMS (Any variety).—1, S. & R. Ashton. 2, H. Beldon. *hc*, Brotherton & Waddington, Idle (Black); T. C. Harrison, Hull; S. S. Mossop, Long Sutton; *c*, H. Stott, Rochdale.

ANY BREED.—Cock.—1, H. Beldon (Golden-spangled Poland); 2, C. Brierley. *hc*, W. A. Burrell, Southwell (Buff Cochins); J. White, Whitley, Netherton (Partridge Cochins); B. Jarvis (Buff Cochins); W. Harvey (Polands); *c*, J. S. Senior (Buff Cochins). *Hens*.—1, Burch & Boulter (Black Spanish); 2, J. White (Golden-spangled Hamburgs). *hc*, J. White (Grey Dorkings); C. Chaloner (Grey Dorkings); J. S. Senior (Black Spanish); W. Harvey (Black Spanish); F. & C. Haworth (Cochins).

c, W. A. Burrell, Southwell (Buff Cochins); E. Aykroyd (Black Red Game); J. Elgar, Newark (Dorkings); E. Brown (Spanish). *Chickens*.—1, Burch & Boulter (Spanish); 2, J. White (Grey Dorkings). *hc*, C. Barber, Southwam (Black Red Game); W. Wilkinson, Wath (Brown Red Game); B. Jarvis, Mansfield (Brown Red Game); C. Chaloner (Grey Dorkings and Black Red Game). *c*, W. & F. Pickhard, Thorne (Spanish).

GUINEA FOWLS.—1, H. Merkin, Driffield. 2, O. A. Young, Driffield. *hc*, Mrs. H. Jackson, Bankside; R. Tomkinson, Balby.

GEES.—1, S. H. Stott, Rochdale. 2 and *hc*, Rev. G. Hustler, Stillington (Grey and White). *c*, Miss E. Fox.

GOELINGS.—1, S. H. Stott. 2, Rev. G. Hustler, Stillington. *hc*, Mrs. J. Furniss, Crowle. *c*, H. Jefferson, Tudworth.

DUCKS.—1 and 2, T. C. Harrison, Hull (Mandarins and Bahamas). *hc*, E. Leech, Rochdale (Rouen); J. Elmhurst (East Indian); O. A. Young, Driffield (Aylesbury).

SELLING CLASS.—1, C. Travis, Thurgoland (Duckwing Game). 2, W. and F. Pickhard, Thorne (Spanish). *c*, J. S. Senior (Spanish); R. Tomkinson, Balby (Black Red Game); J. Hufield, Cottingham (Buff Cochins).

PIGEONS.

CARRIERS.—1, J. Hawley, Dingy. 2, E. Horner, Hsrewood. *hc*, H. Yardley, Birmingham. *c*, G. Layton, Hull.

CROPPERS.—1 and 2, E. Horner. *hc*, W. Harvey.

TUMBLERS.—1, Withheld. 2, H. Yardley, Birmingham.

JACOBIANS.—1, E. Horner. 2, J. Crossland, Huddersfield. *hc*, S. Thompson, Hull.

NUNS.—1, A. A. Vander Meersch, Forest Hill. 2, C. N. Iycho.

TRUMPETERS.—1 and 2, E. Horner. 2 and *hc*, J. Hawley.

TURBITS.—1, A. A. Vander Meersch. 2, H. Yardley. *hc*, E. Horner.

FANTAILS.—1, J. Walker. 2, J. Hawley. *hc*, H. Yardley. *c*, T. O. Taylor, Middlesbrough.

OWLS.—1 and 2, J. Fielding, jun., Rochdale. *c*, T. Eggleston, Halifax.

BARNES.—1, E. Horner. 2, J. Crossland.

SELLING CLASS (Any age or breed).—1 and 2, E. Horner. *c*, H. Barnip, Epworth.

RABBITS.—*Buck and Doe*.—1, T. Marshall, Borton, Brig. 2, T. Ingham, Leeds. *hc*, P. Ashton, Drypool, Hull. *c*, W. Chester, Flungley. *Buck*.—1, B. Hudson, Hull. 2, F. Stainburn, York. *c*, C. Grail, jun., Thorne. *Doe*.—1, A. H. Eastern, Hull. 2, W. Allison, Sheffield. *hc*, T. Ingham. *c*, C. Grail, jun.

Edward Hewitt, Esq., of Sparkbrook, Birmingham, and Frederick Esquilant, Esq., of Effra Road, Brixton, were the Judges.

COLCHESTER POULTRY SHOW.

THIS was held in connection with the Essex Agricultural Society's meeting. In spite of the very unpropitious state of the weather, the Show was well attended, and, as a whole, we consider it a good exhibition of birds, excepting, perhaps, as regards the *Game Bantam* classes, in which there was plenty of room for improvement. The laurels that have been so long gained by Mrs. Seamens and Mr. Fowler for Aylesbury *Ducks*, are being claimed by another lady, as may be seen by the awards published last week. Mrs. Burrell took the first prize, and Mr. Fowler the second. *Brahmas*, both Light and Dark, were well represented, as may be imagined when we mention the names of Maynard, Pares, Borrell, Crack, &c., as being amongst the competitors. We must admit being a little puzzled at the awards to the Dark birds; the second-prize Dark cock was as good a bird as could be desired, and the very model of what a cup *Brahma* should be; but the owner might find consolation by a similar occurrence in the *Dorking* classes, for there we observed as fine a pen of *Dorkings* belonging to Dr. Campbell, passed with a high commendation, and the cup given to a bird that, if we mistake not, we saw at a previous show in the selling class because his feet were faulty.

The list of the awards given by Mr. Smith and Mr. Tegetmeier was published last week.

YORK BIRD SHOW.

OWING to the shortness of time that could be allowed for organising this first Show, and the early period at which it was held (the 16th, 17th, and 18th inst.), the entries were not numerous. In only one instance was a bird found to be artificially coloured; but in several cases exhibitors showed their birds in cages with wooden backs, instead of in those wired all round; they were consequently disqualified, the Committee justly being desirous to carry out the Show in strict conformity to the published rules. To have acted otherwise, would have been unfair to those gentlemen who had, in many cases, incurred some expense in providing new cages. Besides, if one rule is allowed to be disregarded, similar exemption from obedience to other rules might be fairly claimed.

BELGIAN (Clear Yellow).—1, J. Allan, York. 2, Withheld.

BELGIAN (Clear Buff).—1, R. Hawman, Middlesbrough. 2, — Hackers, York.

NORWICH (Yellow).—1, D. Quion, York. 2, R. Smith, York. *One Bird disqualified for being artificially coloured.*

NORWICH (Buff).—1, — Bailey, Sowerby. 2, J. Calvert, York.

YELLOW (Variegated).—1, — Gee, Nottingham. 2, — Heap, Bradford.

BUFF (Variegated).—1, R. Hawman. 2, G. S. Petch, Hull.

BUFF OR YELLOW (Dark Crested).—1, J. Baines, York. 2, — Triffitt, York.

BUFF OR YELLOW (Clear Crested).—1, — Hackers.

BUFF OR YELLOW (Even Marked Crested).—1, Mrs. Tomlinson, York. 2, — Gibbons, York.

LIZARD (Golden-spangled).—1, — Gee. 2, R. Hawman.

LIZARD (Silver-spangled).—1 and 2, R. Hawman.

DUN (Yellow Cinnamon).—1 and 2, — Baines, York.

DUN (Buff Cinnamon).—1, — Baines.

NORWICH (Cage of four Yellow, bred 1899).—1, Pennock & Blackston, Whitley. 2, — Baines, York.

NORWICH (Cage of four Buff, bred 1899).—1, R. Smith. 2, — Reed, York.

ANY COLOUR (Cage of four Crested, bred 1899).—1, Mrs. A. Calvert. 2, — Baines.

SIX CANARIES OF THIS YEAR'S BREED (not more than two of each variety).—1, J. Baines. 2, T. Baines, York.

SELLING CLASS (Canary of any breed).—1, C. Burton, York. 2, — Bailey.

BEST COLLECTION OF TWELVE BIRDS, ENGLISH, FOREIGN, OR BOTH (not more than two of each sort).—1, — Bailey. 2, J. Calvert, York.

GOLDFINCH MULE (Buff).—1, — Hackers. 2, R. Hawman.

GOLDFINCH MULE (Dark).—1, — Baines. 2, — Simpson, Whitley.

GOLDFINCH.—1, — Green, Stamford. 2, Smith.

BULLFINCH.—1, — Calvert.

LINNET (Brown).—1, — Bailey. 2, — Baines.

Mr. G. J. Barnesby, of Derby, was the Judge.

POULTRY AND PIGEON LORE.

POULTRY in the middle ages formed a very considerable portion of the diet of our ancestors in those truly carnivorous days, when, with the exception of "pease" and "kale-works," the table was supplied almost exclusively with "flesh, fowl, and fish." Fruit was little cared for except it were apples to make into cyder.

Quantity rather than quality was consequently coveted, and Swans, because large, and Pigeons from their multitude, there-

fore, were highly prized and protected. As early as 1345, a patent was issued to one Beauchamp (Egid de Bello Campo), to inquire thoroughly relative to the deficiency of the King's Swans; and in the same year an inquiry was directed to ascertain by whom the Swans were taken from the royal forest and manor of Claringdon. Soon after a royal mandate forbade one John de Molyns, evidently an old offender, from catching Swans in any way. Then again and again the Thames was ordered to be searched for Swans, for the use of the Prince of Wales; and lastly, to insure an undivided authority over these birds of many slices, Thomas de Ruasham was appointed supervisor and guardian, and to hold pleas concerning all the King's Swans throughout the kingdom.

The consumption of poultry in London was then sufficient to maintain dealers in such feathered-ware, for in a patent ad-

dress to the Mayor in the first year of Edward the 3rd's reign, among other crafts are enumerated "poulterers, fish-mongers, and butchers" (*Puleterii, Piscerarii, and Carnifices*). In 1345 (19 Edw. 3), the city authorities finding that "folke bringing poultry to the city have sold their poultry in lanee, in the hostels of their hosts, and elsewhere in secret, to the great loss and grievance of the citizens," ordained that the poultry should be brought "to the Leaden Hall, and there be sold and nowhere else;" but the residents in the city must not go there, but "sell their poultry at the stalls (in the Poultry), as of old they were wont to do." "Also, that no cook or regrator shall buy any manner of poultry at the Leaden Hall, nor yet at the stalls, before Prime rung at the Church of St. Paul, on pain of forfeiting the poultry bought, and going bodily to prison."



Twelve years subsequently, the poulterers, freemen of the city, were forbidden standing "at the Carfukes of the Ledenhalle with Rabbits, fowls, or other poultry;" but, if they wished to carry them out for sale, they must do so "along the wall towards the west of the Church of St. Michael, on Cornhulle." The "Carfukes," like the Carfax at Oxford, was probably a four-faced fountain, situated where Leadenhall and Gracechurch Streets meet.

For selling Pigeons "putrid and abominable to the human race," in 1365, one "John Russelle, of Abyndone, Poulterer," was put in the pillory, "and the said Pigeons burnt beneath the pillory." The jury who inspected the Pigeons was constituted of two "pye-bakerees" and five cooks.

In 1416 (4 Hen. 5), it was ordained that Geese should not be deprived of their giblets by poulterers, but be sold whole. Monks of that era evinced either their fondness of poultry, or their weariness of a fish diet, by maintaining that on fast days

they might without sinning eat either, for the singular reason that God created both birds and fishes on the same day, and out of the same material—the water.

The Company of Poulterers were incorporated in the 19th of Henry the 7th's reign and their Charter renewed in the 30th year of Elizabeth. Their arms argent on a chevron between three Storks azure, and as many Swans proper.



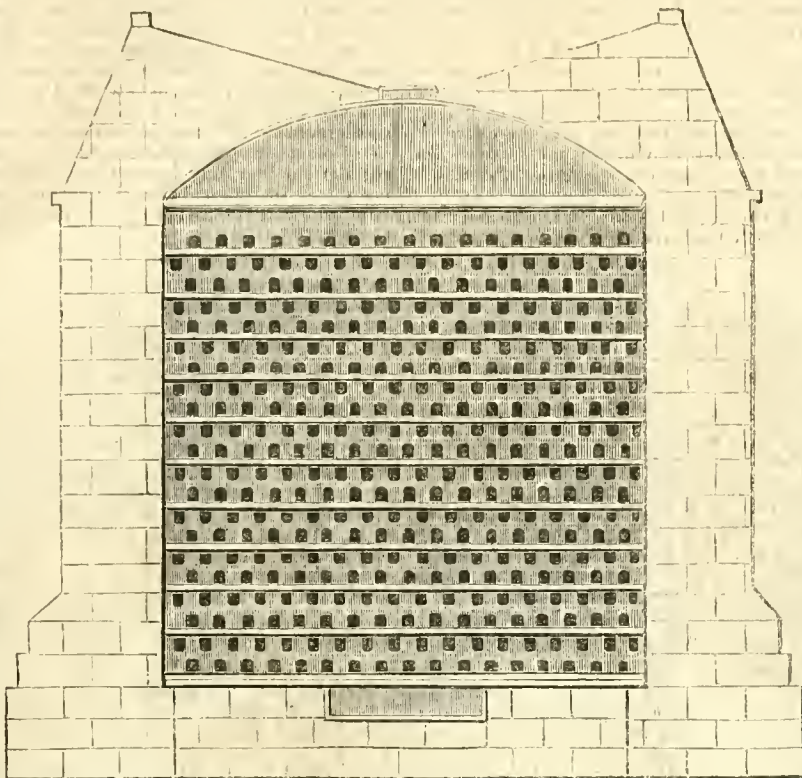
The Company enjoyed its monopoly, and took good care of its interests, or rather the people were too ignorant to see that they could take better care of their own interests than can any livery company. At length, however, monopolies became distasteful, and in that special era of monopolists, James the 1st's reign, the people began to murmur

against and to evade them. The Poulterers' Company felt this, and obtained the issuing, in 1607, of an ordinance, that no freeman exercise the trade of poulting within the city "until he shall first alter his copie into the Society of mere Poulters." And a list of poulterers licensed by the Lord Mayor to sell poultry, was issued the same year.

We have noted how dependant for provisions, in the middle ages, our forefathers were on their poultry and Pigeons. One evidence of this is the following:—About seven miles north-west of Monmouth, in the county of Hereford, lies the parish of Garway, wherein the Knights Templars had a small preceptory. The rules of their order forbade to hunt, shoot, or otherwise pursue game. The Templars, therefore, more even than others when resident at a preceptory were dependant upon their home pro-

duce. They, and the monks, were accustomed, consequently, when letting their lands to reserve to themselves "the Dove-

house with the Doves or colvers therein, and the accustomed way to the same." Such a "Dovehouse," built of sandstone, on the Templars' lands at Garway was, and, we believe, still remains in excellent preservation. Over its doorway was a Latin inscription recording — "In the year 1326, this Dovecote was built by brother Richard." The size, 17 feet 3 inches in diameter in the clear, and the wall 16 feet to the springing of the arched roof. In the wall were 666 holes, about 7 ins. square, being the entrances to the nesting places, which were 17 ins. deep, and counter-sank in the wall, one course of holes inclining to the right hand, and the other course to the left hand



alternately.

THE RABBIT'S NEST.

A DOE of mine has lately made a very strange nest. About two or three days before she kindled, I cleaned out the hutch, covering the floor with ashes and sawdust, mixed (as recommended by your correspondent Mr. Rayson), over which I put some clean oat straw, and a quantity of sweet hay in the sleeping place. She began vigorously to prepare for her coming family, and to all appearance had made a good nest. Two days after the birth I took her out of the nest to look over the young ones. I found the nest nothing more nor less than a fermenting mass of filth. I took out each Rabbit separately and examined it. They were all steaming like a vapour bath, and each had the appearance of being severely pot-bellied. As there were some very nicely-marked specimens, I thought it worth while to try and save them, so I put them in some clean

cotton wool, cleaned out the hutch, and dried it; I then made a fresh nest of hay, and lined it with cotton wool, and placed them in it. The mother, instead of resenting this inroad on her domestic arrangements, seemed on the contrary rejoiced at the change. The swelling I mentioned has completely subsided, and the young Rabbits are getting on as well as I could wish. They are now nearly a week old. The mother has acquired a bad habit of pushing anything she can lay hold of into her nest, and five or six days' ordure would easily form such a mass as I have described. The greater part of the straw and hay, I suppose she had eaten. I was only just in time to save them, for had I left them till the next day, I feel sure every young Rabbit would have been dead.—ALFRED LOCKYER.

MALE AND FEMALE PARROTS.

Is there any truth in the following, which I have extracted from "Notes and Queries"?—

"I have heard it affirmed that the male Parrot always holds anything to eat in his right foot, and that the female as regularly uses the left. And it has been supposed that by this token, or rather habit, the sex of a Parrot may be known, which is otherwise so difficult to determine. But this theory is to me by no means satisfactory. Having been long in the habit of keeping as well as observing Parrots, I am somewhat in a position to oppose this theory. I have never yet seen a Parrot who did not hold his food in his left foot, though I must own that I have heard of some who used the right. One of my own Parrots will sometimes, but very rarely, shift what he is eating to his right foot; but in that he holds it very awkwardly, and apparently uncomfortably, for he invariably takes it back into the left after a minute or two. Of two Parrots which I kept for some years together, but in separate cages, one was of stender make, with a sweet and soft voice, and of so affectionate a disposition, that his death was a painful loss to his master. The other, who survives, is a large powerful

bird, with the most formidable beak I ever beheld, and a loud talker, singer, and whistler, and of a bold and rather treacherous temper. It seems to me most improbable that these two birds, every way so different, should have been of the same sex. The first I always took for a female, the second has every characteristic of a male. Yet both these birds held anything to eat in the left foot."—P. R.

[We happened to have the opportunity of consulting two authorities, and these are their replies.

"It is impossible that the sex of the Parrot can be determined from the taking of the food in either the left or the right foot; it is simply fancy. The Parrots in the Zoological Gardens, male and female, use their feet alike, and anyone who would take the trouble of going there, and watching them for a short time, would soon find what I say is correct.—G."

"The theory that it is only the female Parrot who takes her food in her left foot, is, I believe, about as correct as the old idea that the wedding ring is put on the woman's left hand because there proceeds from the heart a particular vein to the fourth finger of that hand. Very pretty theories both, but

neither correct. All Parrots take their food with the left foot, shifting it for an instant to the right, or more commonly putting the right foot on it. The sex appears difficult to distinguish, and I should never decide until eggs were laid. The African Grey Parrot has been known to lay in this country several times, but never to hatch.—H.]

ARTIFICIAL SWARM DESERTING ITS HIVE.

BEING about to leave home for a few days, I made three artificial swarms on the 5th inst., in order to obviate the chance of disturbance in the apiary by natural swarming during my absence. These were all made in the same manner—viz., by abstracting the brood comb upon which the queen happened to be at the time, placing it with her majesty in an empty hive, and removing the stock to a new position. This must, of course, only be done during the middle of a fine day, and the returning bees make up the swarm, which, having its old queen and a brood comb, usually does exceedingly well. In fact, I never before knew it to fail, save in one instance when I overlooked a group of royal cells on the abstracted comb, and the consequence was the issue of a swarm from the half-filled hive a day or two afterwards. In the present case, however, I kept a sharper look-out, and was therefore enabled to turn my back upon the "ever faithful" city with no misgivings as to the result. Alas for the futility of human anticipations! The very next day after my departure the apiary was disturbed for the first time during four years, by the issue of a natural swarm, which pitched in a cherry tree, and was hived in due course by my friend Mr. S. Bevan Fox, who was summoned to Mount Radford in all haste for the occasion. After my return home, I found on examining the hive from which it had issued that the supposed swarm was in point of fact a true case of desertion by one of my artificial swarms. There was the brood comb, this time quite free from royal cells, and there were divers small pieces of new comb constructed by the truants during their three days' sojourn, but for inhabitants not more than a handful of bees, and these mostly young ones that had never taken wing. I, of course, soon returned them to their (not disconsolate) mother, and in a brief space of time the deserters found themselves in the habitation which they abandoned, with the brood comb as well as the products of their own short-lived industry restored to them. There they now remain contentedly enough, the only result of their emigration being that they occupy a new position in the apiary. What induced the exodus, or why they should now remain contented in a habitation which only a few days ago they abandoned in disgust, appears to me to be "one of these things that no fella can understand."—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

FOWLS FOR EGG-PRODUCING (*A Subscriber*).—You start in error if you wish to have non-sitters, when you put Brahma cocks to Houdan or Crève-Cœur hens. You want no cross; either Houdans and Crève-Cœur will answer your purpose, or Spanish. We believe no one has more experience of the French breeds than ourselves; the result is, we believe the Crève-Cœur to be excellent layers late in the autumn. They are late layers in the spring. They are hardy, but the Houdans are harder; they will do on your soil, and as no grass grows, let them have some large grass sods cut with plenty of earth, and thrown into their run every day. The Brahmas may be kept for the sake of table fowls, and will do well in a small space or in confinement.

BRAHMA POULTRAS BECOMING FAT (*A Distressed Poultry Woman*).—"About three years" is an indefinite term, for it may be any time under four. Neither Brahmas nor Cochins are lasting breeds, but it admits of easy explanation; they are very good layers, good sitters, and good mothers. They do in two years as much as many other breeds do in four. When they have done the work of a lifetime, they rest and are thankful, they put on fat and lay little. We recommend you to keep none over two and a half years old; sell them, and keep pullets to supply their places. The only hens that improve with age, are Spanish. If you sell your "ancients" in good condition, they will realise enough to pay for those that take their places. Those who want eggs must not trust to hens more than two years old.

SCOUR IN FOWLS (*R. W.*).—You should have told us how you feed your fowls. Scouring is probably caused by something that is eaten—either picked up or given. If proof were wanted, you would have it in the dark unhealthy colour of the head; feed on ground oat- or barley meal slaked with water. If the birds have no run, give them large sods of growing grass as frequently as you can. Baily's pills will be the best medicine; they can be had at 113, Mount Street, Grosvenor Square, and at most of the principal patent medicine sellers.

DUCKWING GAME BANTAMS (*T. R. P.*).—Twenty cocks among thirty-one chickens is indeed a strange preponderance. We suppose it will always remain a vexed question whether there be rules of shape or size that can determine the sex of the chicken before the egg is put under the hen. We were, however, told some time since that the first eggs laid were almost always cocks. We have tried it, and the result has disposed us to

believe there is some truth in it, and if we live till next year we intend to give it a fair and good trial. We think little of the Black Reds coming out of Duckwings, we have known it among Game fowls. The black plumage of the Black Red is wanted for the Duckwing, and almost all breeders know the annoyance of having the white spots on that which should be thoroughly black in the Duckwing. The Game Bantams are a recent introduction, and Black Reds have done their part in making Duckwings. There is no limit to throwing back. The late Mr. Fisher Hobbs told us he bred from one of his purest sows a Berkshire pig, while he could swear there had not been one of the breed on his farm for fifteen years; and we ourselves have bred pure setters from a pointer sire and dam kept in close confinement on our own premises.

HAMBURGH HENS LOSING FEATHERS (*J. S.*).—We cannot tell you why the two fowls lose their feathers, but we can tell you how. Either they pick them out of each other, or the others do it for them. From causes as yet unexplained it has been a general complaint this year. Last year we had it for the first time; this year, out of three hundred hens we have forty that are painful to look at. We can assign no cause for it. We have tried inward and outward remedies, but none of them have effected a cure. In the early stages we killed every hen that we caught in the act; but it was useless—we should have killed all in certain pens. Our experiences (many of them), are carried out with a view to answering these queries, and we are aware they have no value unless we give them with all details. Last year our Crève-Cœur ate each other's feathers, this year Houdans and Spanish have stripped each other. Till last year none did it. We have tried all we knew, and it remains our opprobrium.

BLACK HAMBURGH EGGS NOT HATCHING, AND POINTS (*Black Hamburgh*).—We have suffered as you have, our eggs for the last three weeks have not come off as well as they did two months ago. We attribute it to the weather. If the attentions of the cock had anything to do with it, we know one of them is more attentive at this season to a dozen hens, than he is to four in January. The chief points are perfectly black plumage with rich metallic lustre, correctly formed combs, and perfectly white deaf-ear. No process will make a red deaf-ear white, such a bird will not do to exhibit. Choose a white deaf-ear, and well-formed comb, condition will do the rest. Feed on ground oats, barley meal, a little whole corn, and let them have plenty of grass. Wash their legs before they are sent.

GUINEA FOWLS (*E. H. F.*).—They will not lay in a poultry-house. Chickens of the Guinea fowl are so strong that they require food soon after they are hatched, and should have a constant supply by them until they are allowed to be at liberty. Their troughs should be constantly supplied, for they die if kept without food for three or four hours. Have the mother under a coop in a warm corner of the garden, and facing the south. Egg boiled hard, chopped very fine, and mixed with oatmeal is their best food. At the end of six weeks, if hatched under a Bantam or Game hen, they may be allowed to range with her, and be fed at the same time and on the same food as other chickens. May is the best month for placing Guinea fowls' eggs under a hen. Incubation requires from twenty-eight to thirty days.

CANARY DYING (*S. E.*).—It died of what is popularly called "the hunk." It is an inflammation of the lungs, usually caused by exposure to great vicissitudes of temperature—such as sunshine and cold draughts. When the breathing of the bird is noticed to be embarrassed, immediately put a little Stockholm tar in its water, and give it abundance of green food.

PARROT SELF-PLUCKED (*Hampton Wick*).—Read what was said in our last number at p. 418. Do not give hemp-seed, it is very exciting. Pour tepid water plentifully over the bird, through the rose of a watering pot.

MR. MITCHELL'S GLASS (*Nancy*).—"The great advantage of Mr. Mitchell's style of glass is that the suspended little frame, with guide comb, can be lowered to nearly the bottom by the thread through the hole in the knob at top. The bees will quickly cluster upon the frame, and it can be gradually, with the increasing mass, drawn up to its proper place in the lid. With a full hive and plenty of woolen covering on the glass, success is certain."—A REMFRESHIRE BEE-KEEPER.

VARIOUS (*Bee-learner*).—The piece of comb which you found lying upon the floor-board should be removed at once. There can be no harm in superfluous, as well as the swarm; but unless an early change for the better take place in the weather, we doubt whether the bees will take possession of them. You may either accept the cast or return it to the parent hive. If you decide upon the former course, we should advise your driving a couple of condemned stocks in the autumn, and adding their inhabitants to the second swarm and to the old stock.

BEES FORSAKING THEIR HIVE (—).—If the swarm were placed near the old stock, it is very possible that it became weaker, and consequently lighter through a part of the bees returning to their accustomed habitation. We cannot decide the point as to whether there were or were not originally two queens; but if eggs had been deposited in the combs when you examined them on the 9th, we should conclude that the old queen was at the head of the new colony, and in this case she would most probably be the only member of the royal family which accompanied the emigrants.

POUL BROOD (*S. S. Ware*).—The comb was much damaged when it reached us, added to which its contents were in far too advanced a stage of decomposition to enable us to form a very reliable opinion. So far as we could judge, however, it appeared free from foul brood.

BRITTANY COWS.—"Could any of your readers tell me if they find the Brittany cows really profitable? If so, which is the best home market to procure them at?"—A SUBSCRIBER.

POULTRY MARKET.—JUNE 23.

We have little change to note. We have melancholy tidings from the country of mortality among the chickens. All complaint of wet and want of sun.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Green Geese	7	0	7	6
Smaller do.	3	6	4	0	Grouse	0	0	0	0
Chickens	2	0	2	6	Guinea Fowls	0	0	0	0
Goslings	0	0	0	0	Hares	0	0	0	0
Ducklings	3	0	8	6	Rabbits	1	4	1	5
Pigeons	0	8	0	9	Wild do.	0	8	0	9





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